# THE LANCET

**A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.**

*Telegrams*—LANCET, WESTRAND LONDON *Telephones*—GERRARD 4314 & 4315 *Offices*—423, Strand, London, W.C.2

No. XII. OF VOL. I., 1924. **No. 5247. Vol. CCVI.** LONDON, SATURDAY, MARCH 22, 1924. Founded 1823. Registered as a Newspaper. Published Weekly. **Pp. 112 – Price 1s.** Annual Subscription Inland £2 2s. Abroad £2 10s.



JUST OUT.

## DISEASES OF THE RECTUM AND COLON

AND THEIR SURGICAL TREATMENT.

BY

P. LOCKHART-MUMMERY,

F.R.C.S.ENG., M.A., M.B., B.C.CANTAB.,

Senior Surgeon to St. Mark's Hospital.

Over Two Hundred Plates and Illustrations. Price 25s.

Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

Now Ready. Price 42s. net.

## A TEXT-BOOK OF THE SURGICAL DYSPEPSIAS.

By A. J. WALTON, M.S., B.Sc.Lond., F.R.C.S., Surgeon, London Hospital. 740 pages. 272 Illustrations.

LANCET.—"This valuable book should be in the hands of all those interested in the surgical diseases of the stomach, liver, gall-bladder, and pancreas."

CLINICAL JOURNAL.—"We know of no work in our language dealing in so masterly a way with this subject."

London: Edward Arnold & Co., Maddox-street, W. 1.

By H. D. GILLIES, C.B.E., F.R.C.S.,

Plastic Surgeon, Queen's Hospital, Sidcup; Prince of Wales' Hospital, London, N.; and St. Andrew's Hospital, Dollis Hill, London.

## PLASTIC SURGERY OF THE FACE.

424 pages. 844 Illustrations. Price £3 3s.

Oxford University Press,

Humphrey Milford, Amen Corner, London, E.C. 4.

## CANCER OF THE BREAST AND ITS TREATMENT.

By W. SAMPSON HANDLEY, M.S., M.D. Lond., F.R.C.S. Eng.

Second Edition, Revised. With 82 Illustrations. 30s. net.

Published for the Middx. Hospital Press by John Murray, London.

NEW (2nd) EDITION. REVISED AND ENLARGED. JUST READY. *Reduced Price* 7s. 6d.

H. WANSEY BAYLY'S

## VENEREAL DISEASE:

ITS PREVENTION, SYMPTOMS AND TREATMENT.

Pages 176 + xvi. 58 Illustrations.

Overseas Agents:

India and Australasia - Butterworth & Co., Calcutta and Sydney.
Canada - - - - - The Macmillan Co., Toronto.
U.S.A. - - - - - The Macmillan Co., New York.

London: J. & A. Churchill, 7, Great Marlborough-street, W.1.

## HIGH BLOOD PRESSURE.

A MANUAL FOR PRACTITIONERS. Illustrated. 10s. 6d. net.

By J. F. HALLS DALLY, M.A., M.D., B.C. Cantab., M.R.C.P. Lond., Physician to Mount Vernon Hospital for Diseases of the Chest, etc.

"It combines a great deal of information with the result of much practical experience."—BRITISH MEDICAL JOURNAL.

W. Heinemann Medical Books Ltd., 20, Bedford-st., London, W.C.2.

BY C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.

SURGICAL "DONT'S" (AND "DO'S"). Price 3s. net.

"Full of practical wisdom."—BRITISH JOURNAL OF SURGERY.

"Much sound advice, not to be found in text-books."—MEDICAL PRESS & CIRCULAR.

ACUTE APPENDICITIS. Price 4s. net.

London: Harrison & Sons, Ltd., 44-47, St. Martin's-lane, W.C. 2.

JUST ISSUED.

## PEARL'S MEDICAL BIOMETRY AND STATISTICS.


See Saunders' Advertisement on Page 5.


NOW READY. Demy 8vo. Pp. xii. + 196. With 50 Figs. Price 10s. 6d. net (postage 6d.).

## DISEASES OF THE HEART:

FOR PRACTITIONERS AND STUDENTS

CONCISE INTRODUCTION TO CLINICAL ELECTROCARDIOGRAPHY.

By I. HARRIS, M.D., L.R.C.P.(Ed.),

Hon. Physician in Charge, Cardiographic Department, Liverpool Northern Hospital.

Baillière, Tindall & Cox, 8, Henrietta St., Covent Garden, W.C.2.

Fourth Edition. Crown 8vo. Pp. viii. + 244. With 92 Illustrations and Coloured Plate. Price 7s. 6d. net.

## REFRACTION OF THE EYE.

By ERNEST CLARKE, M.D., F.R.C.S. Eng.

"One of the best, if not THE best, book on the subject in this or any other language."—EDINBURGH MEDICAL JOURNAL.

Baillière, Tindall & Cox, 8, Henrietta-st., Covent Garden, W.C.2.

*THE HANDBOOK ON BIRTH CONTROL FOR MARRIED PEOPLE.*

## WISE PARENTHOOD

BY

MARIE C. STOPES, D.Sc., Ph.D.,

Author of "Married Love"; "Radiant Motherhood"; "Contraception," etc.

12TH EDITION, Revised and Enlarged, 5s. 6d. net. (Post. 5d.)

This book is specially suited for Doctors to recommend to enquiring patients. It is safe, practical, and scientific.

*Descriptive circulars of this and Dr. Stopes's other books can be had on application.*

Putnam, 24, Bedford-street, W.C. 2.

## MENTAL DISEASES

**A Text-book of Psychiatry for Medical Students and Practitioners.**

**By R. H. COLE, M.D., F.R.C.P.,**

Physician for Mental Diseases to St. Mary's Hospital; Examiner in Mental Diseases and Psychology, University of London.

*With 54 Illustrations. Third Edition, Ready this Week, fully Revised and Entirely Reset. Cloth.* **15s.** *net.*

"There is a breadth of view, a comprehensiveness of plan, and a surprising completeness of detail in little space, and its numerous illustrations and plates are decidedly good. . . . Of special service to the student and the busy practitioner."—JOURNAL OF MENTAL SCIENCE.

## DISEASES OF WOMEN

**By T. G. STEVENS, M.D., F.R.C.S., M.R.C.P.,**

Obstetric Surgeon, St. Mary's Hospital for Women; Examiner to the Central Midwives Board, &c.

"The work is, above all, distinguished by the very clear and full descriptions given of the pathology of the various affections."—THE LANCET.

*Second Edition. Entirely Reset. With over 200 Illustrations and Plates.* **20s.** *net.*

London: UNIVERSITY OF LONDON PRESS, LIMITED,

17, WARWICK SQUARE, E.C. 4.

*THE STRAPPING THAT GRIPS.*

**LESLIES ZŌPLA Zinc Oxide Plaster**

**A tenaciously self-adhesive Plaster which will not slip, however great the strain. Antiseptic.**

**NON-IRRITATING AND THOROUGHLY RELIABLE.**

**On white and flesh colour cloths, also on holland, on spools and in rolls. SAMPLES ON REQUEST.**

USE ALSO OUR HOLLAND STRAPPING. THE ORIGINAL AND STILL THE BEST.

**LESLIES LTD., High Street, Walthamstow, LONDON, E.17.**

**Two fine products—each the original and standard in its field—from the celebrated laboratories of E. Schering.**

**ATOPHAN**

Promotes the excretion and arrests the formation of uric acid.
Since 1911 the standard remedy in **Rheumatism, Gout, Neuritis, Sciatica, etc.,** where it has displaced the so-called "Uric Acid solvents."

**VERAMON**

The safe analgesic which **produces prompt analgesia without hypnosis.**
This product has been used with success in "all possible forms of painful conditions" including all forms of **headache and toothache, dysmenorrhœa, tabetic crises, etc.**

**Samples and Literature on request from the importers:—**

**A. & M. ZIMMERMANN, Ltd., 3, Lloyd's Avenue, London, E.C. 3**

**Jeyes' FLUID**

*The Best Disinfectant*

**Cyllin—Jeyes' Special Fluid.**—The relatively non-poisonous Bactericide. Rideal-Walker Coefficient 18–20.

**Cyllin Medical**—A refined preparation of Cyllin. 22 to 24 times the strength of pure carbolic acid.

**Cyllin Capsules**—A valuable stomachic and intestinal disinfectant.

**Jeyes' Lysol (Jeysol)**—Makes a clear solution. 2½ times the strength of pure carbolic acid.

**Lano-Cyllin**—For Burns, Chilblains, Sores, etc.

**Jeyes' Vaporiser with Vapor-Jeyes.**—4/9 complete. For Chest and Lung affections.

By Appointment

**BRANALCANE.**

The effective non-poisonous remedy for ULCERATED, RELAXED, and DIPHTHERITIC SORE THROATS, PYORRHEA, &c
In 2-oz., 6-oz., or 12-oz. bottles.

**Jeyes' Sanitary Compounds Co., Ltd., 64, Cannon Street, London, E.C.4.**

# THE LANCET

No. 5247. LONDON, SATURDAY, MARCH 22, 1924. Vol. CCVI.

# CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

**LETTSOMIAN LECTURES**
on the Treatment of Pulmonary Tuberculosis
By R. A. YOUNG, C.B.E., M.D., B.Sc., F.R.C.P.—(Lecture III.) ..... 581

**ORIGINAL ARTICLES.**
The Incidence of Cancer in Egypt: An Analysis of 671 Cases. By ROBERT V. DOLMEY, M.S., F.R.C.S., and A.W. MOORE, F.R.C.S. ..... 587
An Unexplained Diazo-Colour-Reaction in Uræmic Sera. By C. H. ANDREWES, M.D. .... 590
Excision of the Rectum: Abdomino-Vaginal as an Alternative to Abdomino-Perineal Excision. By VICTOR BONNEY, M.S., M.D.—(*Illustrated*)..... 592
Animal Tumour Cells Made Resistant to X Rays by X Rays. By S. RUSS, D.Sc. 592
The Metabolism of Cod-liver Oil by Diabetics. By Prof. V. H. MOTTRAM, M.A.—(*Illustrated*) .... 593

**CLINICAL AND LABORATORY NOTES.**
Unusual Varieties of Calabar Swellings. By GEORGE C. LOW, M.D., M.R.C.P.—(*Illustrated*).. 594
A Note on Vertigo. By RICHARD LAKE, F.R.C.S. 595

**MEDICAL SOCIETIES.**
Royal Society of Medicine: Possible Substitutes for Cocaine ..... 596
London Assoc. of Medical Women's Federation .. 598
Edinburgh Medico-Chirurgical Society ..... 599
Liverpool Medical Institution ..... 600

**REVIEWS AND NOTICES OF BOOKS.**
Operative Surgery. By W. S. Bickham, M.D... 601
The Students' Handbook of Surgical Operations. By the late Sir Frederick Treves, F.R.C.S., and Jonathan Hutchinson, F.R.C.S. ..... 601
Assyrian Medical Texts. By R. Campbell Thompson, M.A., F.S.A. ..... 601
Modern Methods in the Diagnosis and Treatment of Glycosuria and Diabetes. By Prof. Hugh MacLean, M.D... 602
X Rays and Crystal Structure. By Sir W. H. Bragg, D.Sc., F.R.S., and Prof. W. L. Bragg, F.R.S. ..... 602
The Endocrine Organs. Part I. By Prof. Sir E. Sharpey Schafer, M.D., F.R.S. ..... 602
An Introduction to the Study of Secretion. By Prof. Swale Vincent, M.D., F.R.S. ..... 602
Lectures on Endocrinology. By Prof. Walter Timme, M.D. ..... 603
Marriage and Syphilis. By G. M. Katsainos ..... 603
Papers on Psycho-Analysis. By Ernest Jones, M.D... 603
Mind as a Force. By Charles F. Harford, M.D. 603
Quarterly Journal of Microscopical Science ..... 603

**THE CONDUCT OF MEDICAL PRACTICE.**
XII.—Public Health Appointments. By G. S. ELLISTON, M.C., M.A... 604

**LEADING ARTICLES.**
ON INQUESTS AND AUTOPSIES ..... 607
ADOPTION OF CHILDREN .. 608
THE EFFECT OF MATERNAL SYPHILIS ON THE DEATH OF THE CHILD ..... 608

**ANNOTATIONS.**
Treatments in Vogue in German Sanatoriums .. 609
A Clinical Anthology .... 609
A Diet Scheme for the Tropics ..... 610
General Paralysis in Old Age ..... 610
Zoology and Eugenics ... 610
Bismuth in the Treatment of Interstitial Keratitis 611
Mental Defect in Early Childhood ..... 611
The Determination of Acuity of Vision ..... 612
The Health of Hong-Kong 613

**MODERN TECHNIQUE IN TREATMENT.**
LXIII.—Increasing Deafness in Elderly People. By Dr. ALBERT A. GRAY. 613

**SPECIAL ARTICLES.**
An Investigation into the Present Health of German Children. By HELEN M. M. MACKAY, M.D., M.R.C.P., and M. D. MACKENZIE, M.D., D.P.H.—(*Illustrated*) .. 615
The Differential Diagnosis and the Prevention of Small-pox. By A. F. CAMERON, M.D., D.P.H. 618
Memorial to Lord Lister—(*Illustrated*) ..... 606
Vienna: The Ultimate Sequelæ of Infantile Cardiac Disease ..... 620
Scotland: Glasgow Royal Mental Hospital ..... 621
Paris: The Dangers of Swimming Pools..... 622
Royal Medical Benevolent Fund Guild ..... 622

**CORRESPONDENCE.**
The Risks of Certifying in Lunacy: Indemnity Insurance (Sanderson and Co.) ..... 623
Certificates of Insanity (Drs. I. D. Suttie, S. E. White, S. A. Gill) ..... 624
Harnett *v.* Bond and Adam (Dr. Richard Eager).... 624
Memorial to Prof. O'Sullivan (Drs. E. J. Gwynn, J. W. Bigger) .. 625
*B. Pyocyaneus* Infection (Dr. Ernest H. Shaw) .. 625

**OBITUARY.**
Robert Alexander Bickersteth, F.R.C.S. ..... 625
Donald William Charles Hood, C.V.O., M.D..... 625
Thomas Brittin Archer, M.R.C.S. ..... 626
George Palmerston Newbolt, F.R.C.S. ..... 626
Henry Hammond Smith, M.R.C.S. ..... 626

**THE SERVICES.**
Royal Army Medical Corps ..... 623

**MEDICAL NEWS.**
Royal College of Surgeons of England ..... 627
Hunterian Society ..... 627
Cancer Hospital, London . 627
Royal Institution of Great Britain ..... 627
Fellowship of Medicine and Post-Grad. Med. Assoc.. 627
Liverpool New Maternity Hospital ..... 627
Memorial to the late Dr. G. S. Hart ..... 605
Whipps Cross Hospital, Leytonstone ..... 606
Royal Medical Benevolent Fund ..... 617
Donations and Bequests . 625
North-Western Tuberculosis Society ..... 627
Medical Officers of Schools Association ..... 627
London (R.F.H.) School of Medicine for Women ... 627
Ophthalmic Benefits for Insured Persons ..... 627
London, County Council and Detention of Lunatics..... 627
Mental After-Care Association ..... 628
Deal: Opening of War Memorial Hospital .... 628
Harnett *v.* Bond and Adam 628
Ladies' Medical Golfing Society ..... 628
National League for Health, Maternity, and Child Welfare ..... 628
Medical Society of London: Anniversary Dinner ... 628

**PARLIAMENTARY INTELLIGENCE.**
House of Commons: Law Relating to Coroners' Inquests.—Case of Harnett *v.* Bond.—The Spahlinger Treatment.—Army Medical Services.—Mental After-Care of Ex-Service Men.—Lunacy Law Reform.—Effect of the Dangerous Drugs Act.—International Opium Traffic.—Health Insurance Finance.—Trials of Lunatics.—Deafness and Pensions..... 628

**NOTES, COMMENTS, AND ABSTRACTS.**
The Health of the Soudan: Foundation of a New Medical School ..... 631
Rescue and Preventive Institutions ..... 632
Entry of Medical Students in 1923 ..... 632
Improved Medical Case .. 632
Tsetse Fly Investigation in Nigeria ..... 632
Santoperonin..... 632
Medical Diary ..... 630
Vacancies..... 631
Births, Marriages, Deaths. 631

**TEN POST-GRADUATE LECTURES.**

Delivered before the Fellowship of Medicine at the house of the Royal Society of Medicine, 1919-1920. With a Preface by the Right Hon. **Sir CLIFFORD ALLBUTT**, P.C., K.C.B., M.D., F.R.S. Demy 8vo, **10s. 6d.** net, post free **11s. 3d.** The volume contains Lectures by Sir GEORGE SAVAGE, M.D., Sir WILLIAM HALE-WHITE, M.D., Sir HUMPHRY ROLLESTON, M.D., FRANCIS HERNAMAN JOHNSON, M.D., J. D. MORTIMER, F.R.C.S., WILFRED HARRIS, M.D., N. MUTCH, M.D., W. H. TRETHOWAN, F.R.C.S.

"This admirable volume. The very help that is needed, as well as the modern aspect of the contributions, make the volume valuable, and we anticipate for it a wide sale. The information contained is arranged in the manner most convenient and helpful to the man in general practice."—LANCET.

**SPECIAL MANSON NUMBER**

of the "JOURNAL OF TROPICAL MEDICINE AND HYGIENE," in commemoration of the Life and Work of the late Sir Patrick Manson, G.C.M.G., M.D., F.R.S., LL.D., containing an autobiography, articles on Manson as a Practitioner of Medicine, Helminthologist, Bacteriologist, Dermatologist, Observer and Organiser a Bibliography of his Writings, &c. With 2 beautiful full-page Portraits and 36 Illustrations.

**SPECIAL PASTEUR NUMBER.**

PASTEUR AND HIS WORK HISTORICALLY CONSIDERED, by **LOUIS W. SAMBON**, M.D., F.Z.S. With a full-page Portrait and 22 Illustrations.

**3s.** net each.

**JOHN BALE, SONS & DANIELSSON, LTD., 83-91, Great Titchfield Street, London, W. 1.**

## JUST PUBLISHED.

**42nd Year.** 146 *Text Illustrations and* 54 *Plates* (14 *of which are Coloured*). Price **20s.** net. Postage 9d.

# MEDICAL ANNUAL, 1924

**A YEAR-BOOK OF TREATMENT AND PRACTITIONER'S INDEX:**

**Being a Review of the World's Progress in Medicine and Surgery. Arranged in Alphabetical Order for easy Consultation.**

CONTRIBUTORS

**ABDOMINAL SURGERY:** E. WYLLYS ANDREWS, F.A.C.S., A.M., M.D., Chicago
**ANÆSTHESIA:** JOSEPH BLOMFIELD, O.B.E., B.A., M.D.
**CHILDREN, MEDICAL DISEASES OF:** FREDERICK LANGMEAD, M.D., F.R.C.P.
**EAR, NOSE AND THROAT:** A. J. M. WRIGHT, M.B., F.R.C.S.
**EYE DISEASES:** A. BERNARD CRIDLAND, F.R.C.S.E., M.R.C.S., L.R.C.P., D.O.Oxon.
**GASTRO-INTESTINAL DISORDERS:** ROBERT HUTCHISON, M.D., F.R.C.P.
**GENITO-URINARY SURGERY:** Sir JOHN THOMSON-WALKER, O.B.E., M.B., F.R.C.S.
**GYNÆCOLOGY & OBSTETRICS:** WM. E. FOTHERGILL, M.A., B.Sc., M.D.
**HEART AND BLOOD-VESSELS:** Drs. CAMILLE LIAN, R. BARRIEU, and Drs. PETIT and POLLET, Paris.
**INFECTIOUS DISEASES, ACUTE:** J. D. ROLLESTON, M.A., M.D.Oxon.
**LIVER FUNCTION TESTS:** O. C. GRUNER, M.D.Lond., M.R.C.S.
**MEDICINE, GENERAL:** HERBT. FRENCH, C.B.E., M.A., M.D.Oxon., F.R.C.P.
**MENTAL DISEASES:** C. STANFORD READ, M.D.
**NERVOUS SYSTEM, DISEASES OF:** Sir JAMES PURVES-STEWART, K.C.M.G., C.B., M.D., F.R.C.P.
**NERVOUS SYSTEM, SURGERY OF:** J. RAMSAY HUNT, M.D., New York.
**ORTHOPÆDIC SURGERY:** E. W. HEY GROVES, M.S., M.D., F.R.C.S.
**PSYCHOLOGICAL MEDICINE:** J. A. HADFIELD, M.A.Oxon., M.B., Ch.B.Edin.
**PUBLIC HEALTH:** JOSEPH PRIESTLEY, B.A., M.D., D.P.H.
**RADIO-ACTIVITY & ELECTROTHERAPEUTICS:** CHAS. THURSTAN HOLLAND, D.L., Ch.M., M.R.C.S., L.R.C.P.
**RENAL AND URINARY DISEASES:** JOHN D. COMRIE, M.A., M.D., F.R.C.P.Ed.
**RESPIRATORY TRACT, DISEASES OF:** WILLIAM H. WYNN, M.D., M.Sc., F.R.C.P.
**SKIN DISEASES:** E. G. GRAHAM LITTLE, M.D., F.R.C.P.
**SURGERY, GENERAL:** Sir W. IRELAND DE COURCY WHEELER, M.D., F.R.C.S.I., F.A.C.S. (Hon.)
**SURGERY, RECTAL:** J. P. LOCKHART-MUMMERY, M.B., F.R.C.S.
**TROPICAL DISEASES:** Sir LEONARD ROGERS, C.I.E., Lt.-Col. I.M.S. (retd.), M.D., F.R.C.P., F.R.C.S., F.R.S.
**VENEREAL DISEASES:** L. W. HARRISON, D.S.O., Brevet-Col. R.A.M.C. and King's Hon. Physician (retd.), M.B., Ch.B., M.R.C.P.E.

*ASSOCIATE EDITORS:* **(Medicine)** CAREY F. COOMBS, M.D., F.R.C.P.: **(Surgery)** A. RENDLE SHORT, M.D., B.S., F.R.C.S.

BRITISH MEDICAL JOURNAL.—"*It is difficult to turn to a single section without finding a tale of endeavour and some progress.*"
THE LANCET.—"*There are few medical men established in practice to whom the 'Medical Annual' needs an introduction.*"
INDIAN MEDICAL GAZETTE.—"*It would be difficult to find anywhere else such a complete review of recent knowledge so clearly written and so concise, yet so fully illustrated.*"

**London: SIMPKIN, MARSHALL & CO. LTD.** **Bristol: JOHN WRIGHT & SONS LTD.**

NOW READY. NEW & REVISED EDITION (7TH). **25/-** net. 1100 pages

## WHITLA'S DICTIONARY OF TREATMENT.

**Includes Medical, Surgical, Gynæcological, Obstetric, Cutaneous, Eye and Ear Therapeutics.**

*Also,* JUST ISSUED. ELEVENTH EDITION. **10/6** net.

## PHARMACY, MATERIA MEDICA & THERAPEUTICS.

**A Commentary on the B.P. Drugs and New Remedies.**

Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden, W.C.2.

## STAMMERING

**W. J. KETLEY, "Tarrangower," Brondesbury, N.W.**

30 **years colleague of late B. BEASLEY, Brampton Park, Huntingdon.**

**Those interested in the subject should write for his book, which will be sent post free.**

## STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. CASES, non-resident, treated at 39, Earl's Court Square, S.W. 5, and, in residence, in the Summer holidays at Miss Behnke's house on the Chilterns.
"Pre-eminent success in the education and treatment of stammering and other speech defects."—*The Times.*
"Thoroughly physiological principles."—*The Lancet.*
"The method is scientifically correct and perfectly effective."
—*Guy's Hospital Gazette.*
**"STAMMERING, CLEFT PALATE, SPEECH, LISPING," 3s. 9d.**
of Miss BEHNKE, 39, Earl's Court Square, S.W.5.

Price 1s. With Illustrations.

## APPLICATION OF TRUSSES

to HERNIÆ. Clinical Lecture delivered at King's College Hospital. By the late JOHN WOOD, F.R.S., Senior Surgeon to King's College Hospital. Reprinted from "Medical Examiner."
London: Matthews Brothers, 10, New Oxford Street, W.C.

## STAMMERING

**MOST SUCCESSFULLY TREATED.**

RESIDENT AND DAILY PUPILS.

PROSPECTUS AND MEDICAL OPINIONS POST FREE FROM

**Mr. A. C. SCHNELLE,** [Tel.: Museum 3665
Estd. 1905] **119, Bedford Court Mansions, London, W.C.1.**

JUST PUBLISHED.—3RD EDITION.

## CLINICAL ELECTROCARDIOGRAPHY.

**By SIR THOMAS LEWIS,**

M.D., F.R.S., D.Sc., F.R.C.P., C.B.E.

**Price 8s. 6d. net, Postage 4d.**

SHAW & SONS, LIMITED, 7, 8, & 9, FETTER LANE, LONDON, E.C.4.

**A REPORT OF THE WORK carried out at the**

## RADIUM INSTITUTE,

**LONDON, from JAN. 1st, 1923, to DEC. 31st, 1923,**
By A. E. HAYWARD PINCH, F.R.C.S.,
Medical Superintendent.
(Published with the authority of the Committee.)

Medical Practitioners may obtain copies of the same, post free, on application to THOMAS A. GARNER, Secretary, 16, Riding House-street, W.1.

## "GAMGEE TISSUE"

**Sole Proprietors and Manufacturers:**

**ROBINSON & SONS, Limited,**

**Chesterfield.**

**BUY AN ERIKA FOR 5/- PER WEEK**

## TAYLOR'S FOR TYPEWRITERS

**DESKS & TABLES** **ADDING & CALCULATING MACHINES**

**74, CHANCERY LANE, HOLBORN, LONDON.**

THE ERIKA
The Best Portable Writer Complete in Travelling Case £14 14s.

**HIRE** BUY, EXCHANGE, REPAIR, AND **SELL**

VERY EASY HIRE PURCHASE.

All makes of Typewriters and Duplicators. Authors MSS. and Circular Letters typed by return of post.

**Write Dept. 26.** **Tel.: Holborn 4810.**
Temporary Typists Sent Out. *Estd. 1902*

# Lettsomian Lectures

ON THE

TREATMENT OF

# PULMONARY TUBERCULOSIS.

*Delivered before the Medical Society of London*

BY R. A. YOUNG, C.B.E., M.D., B.Sc.,
F.R.C.P. LOND.,
PHYSICIAN TO THE MIDDLESEX AND BROMPTON HOSPITALS.

## LECTURE III. (*Delivered on March 17th.*)

### METHODS OF SECURING LOCAL REST FOR THE LUNG.

THE established value of rest as a cardinal factor in the treatment of pulmonary tuberculosis rendered it fitting that attempts should be made to secure more complete rest to the affected lung than that afforded by simple recumbency. The success of strict local rest in the treatment of tuberculosis of the bones, joints, and spine offered also a direct incentive to attempts to achieve similar conditions for the pulmonary lesions. In this lecture I propose to consider the methods which have been devised to this end, with special reference to the indications for their application, their present limitations, and contra-indications. In this connexion it is well to remember that opinion is still in the making, and that with greater experience and with improved methods these forms of treatment may well prove to be of wider application by affording help to cases for which at present they seem unsuitable. This much may even now be affirmed, that they represent a real advance in treatment, that they have given help to cases in which other methods have failed lamentably, and that they have been the means of prolonging many lives and of restoring to active and useful life not a few patients whose outlook was at best one of chronic invalidism. It is much to be regretted that in this country, in which the original suggestions of several of these methods of treatment originated, they have been somewhat neglected until recently. There is now, however, gratifying evidence that their value is being widely recognised here, and they are now taking a recognised place in the scheme of treatment of this disease largely owing to the work of Lillingston, Pearson, Morriston Davies, Riviere, and Burrell. The recent report on artificial pneumothorax of Burrell and MacNalty, published by the Medical Research Council, is a very valuable analysis of the present state of this form of treatment, and a recent number of *Tubercle*[1] contains a valuable summary of the present position of thoracic surgery. To both of these publications I must here acknowledge my great indebtedness.

At the outset it may be well to stress the importance, indeed the absolute necessity, of X ray control of all methods directed to securing local rest to diseased lung tissue. Some years ago I asked Dr. Rist of Paris why it was that he found so many more cases suitable for artificial pneumothorax treatment than most British physicians. He replied that it was because he used X rays more than we did. As far as possible every case of active tuberculous disease of the lung should be examined with the X rays, and particularly all those not responding satisfactorily to ordinary methods of treatment. This examination may reveal the suitability of the case for these special methods of treatment, or demonstrate almost conclusively their impracticability. While these treatments are in progress X ray control is also of the greatest assistance.

### 1. SIMPLE MECHANICAL METHODS.

In cases where strict rest in bed fails to render the patient afebrile, attempts may be made to limit the respiratory movements of the affected lung, or even of the diseased part of the lung, by mechanical means such as by belts and strapping. This method was originally employed by Dr. F. T. Roberts in the treatment of painful pleurisy. He applied strapping to the affected side in a manner similar to its application in the immobilisation of fractured ribs. Various ingenious mechanical contrivances have been employed to restrict the movements of the affected side or of that part of the affected lung which is known to be most diseased. Application of sand-bags in such a way as to obstruct the movement of one side of the chest is sometimes employed. At Frimley we sometimes use an "apex belt" to lessen the excursion of the upper part of the chest. Dr. Wingfield has recently employed strapping in broad strips, applied with considerable force so as very effectively to limit the movement of one side of the chest. The strapping has necessarily to be reapplied when it slips to such an extent as to allow more movement again. Dr. S. H. Stewart[2] has devised an ingenious lung splint which he has used for the same purpose.

Recently Dr. S. A. Knopf[3] has claimed that what he describes as "rest breathing" is a useful adjunct to treatment. He maintains that animals which breathe slowly live longer and are less susceptible to tuberculosis than those breathing more quickly. He believes that "in controlled diaphragmatic breathing, aided, if necessary, by slight mechanical restrictions, we have the best substitute for artificial pneumothorax, particularly where the tuberculous lesion is limited to the upper portion of the lungs." He instructs the patient to breathe slowly and to use the diaphragm chiefly. He has found that the number of expirations can be reduced from 20 per minute to ten or less, with great advantage to the patient.

None of these methods should be persisted in if they increase pain or lead to cough and dyspnœa. They are often impracticable if there is emphysema. Knopf allows that his method is not to be used if there is great involvement of the lower lobes.

### 2. ARTIFICIAL PNEUMOTHORAX.

Mechanical methods such as those just described can at best only restrict the movement of the affected lung and limit the respiratory ventilation of that side. In some cases this restriction may be sufficient to quieten if not lessen the circulation through the diseased areas and to prevent absorption of toxic products. When these areas of disease are extensive and active these methods often fail and the case becomes an unfavourable one, involving very prolonged rest before quiescence is achieved or active spread with progressive deterioration and eventually death. To such cases artificial pneumothorax when practicable offers a further chance of improvement and arrest. The suggestion for its use in pulmonary disease is over a hundred years old, and is due to Dr. James Carson, of Liverpool. It was again suggested by Forlanini in 1882, and carried out by him in 1888, so that he must be regarded as the pioneer of this form of treatment, though it had been employed in France by Potain in 1884 to replace fluid in a hydro-pneumothorax. Cayley in 1885 had a pneumothorax induced by incision to endeavour to stop severe hæmoptysis. Murphy of Chicago used this form of treatment in 1898. Brauer improved the technique and added the water manometer to the apparatus for induction of the pneumothorax, thereby greatly lessening its risks.

Artificial pneumothorax was first used in this country by Lillingston in 1910, and next year cases were recorded by him and by Colebrook, Pearson, and Rhodes. It is now recognised as a valuable routine treatment for suitably selected cases by most workers in this country, and it is important that the indications and contra-indications for its employment should be more widely known.

[1] Tubercle, October, 1923, p. 1.

[2] Brit. Med. Jour., 1923, i., 414.

[3] British Journal of Tuberc., 1923, xvii., No. 3.

*Rationale of the Treatment.*

Artificial pneumothorax treatment aims at allowing the lung to collapse by admitting sterile air, oxygen, nitrogen, or other gas into the pleura. The lung collapses in the first instance by its own elasticity, this being no longer controlled by the negative pressure in the pleural space. It is obvious that when this elastic recoil of the lung is complete the pressure in the pleura should be that of the atmosphere and that any further introduction of gas into the pleura will raise the pressure to a positive level, with the result that the lung will be subjected to a compressing force. It must also be borne in mind that these readjustments of the intra-pleural pressure involve alterations in the mediastinum, which is at first drawn to the opposite side till the pressure becomes zero, and afterwards pushed over to it, when the pressure becomes positive. The importance of manometer readings of these pressures is therefore apparent. They are further essential as affording the best means of determining when the needle is in the pleural space and when the air or gas may safely be allowed to pass into this space. In the induction of a pneumothorax the object is to get the lung to collapse by its own elasticity, and it is unnecessary and undesirable to introduce a large amount of gas at the first sitting or to obtain zero or atmospheric pressure, still less a definite positive. It is only later, when the question of incomplete collapse from adhesions or insufficient gas entry becomes apparent, that the question of increased pressure becomes important. It must be remembered that as in spontaneous pneumothorax, the altered pressure relations may lead to dyspnœa, pain, restlessness and cardiac embarrassment, and the onset of any of these symptoms during the treatment demands careful investigation. An excessive pressure may lead to the condition of mediastinal bulge or hernia, whereby the distended pleura transgresses the mediastinal area and appears as a definite projection towards the sound side. This is to be avoided if possible. In cases of incomplete collapse in which attempts are made to stretch or break down adhesions by gradual increase of pressure, failure often occurs, and the increased gas put in may lead to mediastinal bulge instead of to further lung compression. The present tendency is against high pressures and against attempts to break down adhesions by this means as not being devoid of risk. These points illustrate and emphasise the importance of X ray control of the treatment.

This form of treatment may also serve the very useful purpose of allowing lung tissue which is the site of an excavation to contract, thus reducing the cavity and promoting healing and fibrosis. In like manner it may be of value in severe hæmoptysis by contracting the lung tissue around the aneurysm or vessel from which the hæmorrhage comes.

It might be expected if there were active lesions in the opposite lung that they would become more active owing to the increased work thrown upon this lung. This, in point of fact, does occur, if there are extensive lesions present, and may necessitate abandonment of the treatment after it has been started. Where the lesions are localised and of comparatively slight activity, however, there may be a definite beneficial effect and these lesions may progress satisfactorily to arrest. This may be due to increased vascularity of this side, which has been supposed to occur, or to a cessation of focal reactions owing to the prevention by the collapse produced, of auto-inoculations from the more diseased side.

*Indications and Contra-indications.*

In spite of its great and well-established value artificial pneumothorax is not a form of treatment to be lightly applied. Every case must be considered from many aspects to determine whether the treatment is likely to benefit the patient and to improve his chances of recovery. The actual indications are still subject to discussion, though there is general agreement as to most of them. It is most suitable for patients in whom the disease is confined to one lung, or in whom, if bilateral, there are only localised or slightly active lesions on the side less involved. It is difficult to lay down a standard as to what extent of disease in the second lung renders the operation likely to fail. Each case must be considered as an individual problem, after careful review of the symptoms, the signs, the X ray findings, the physique, and the general condition of the patient, with special reference to the condition of the circulatory system.

These conditions being fulfilled we may consider artificial pneumothorax (1) in cases in which, in spite of treatment in a sanatorium or on sanatorium lines, the disease is obviously active and spreading and there is fever, with cough and expectoration or signs of caseation. The question as to how long ordinary treatment is to be persisted in is a difficult one, and no hard-and-fast rule can be made. Dr. Burrell suggests that the treatment should be considered in any such patient who shows signs of activity after six months medical treatment. On the other hand, it may jeopardise the chances of complete success if the decision is unduly postponed, and where the clinical signs and the radiographic examination indicate failure to secure arrest, the treatment should be started much earlier. (2) In cases with repeated severe hæmorrhages this form of treatment is of great value, and it offers a means of dealing effectively with the cause of the hæmoptysis. It may also be considered in cases of severe and prolonged hæmorrhage, which do not yield to the ordinary methods of treatment. (3) In patients who settle down and become afebrile under sanatorium treatment, but are left with cavities and with more or less copious expectoration containing tubercle bacilli. (4) In patients who are afebrile while in bed or while on restricted exercise, but who get auto-inoculations or become slightly febrile on attempting to work. (5) Cases with marked basic signs or with bronchiectasis, though pleural adhesion often renders it impracticable.

The contra-indications are more explicit, although it is possible that with increasing experience and modified methods some cases which are at present regarded as absolutely unsuitable may prove to be capable of benefit. The main contra-indications fall into two groups: (1) those due to the disease: (2) those due to the physique, temperament, and general medical state of the patient. To the first group belong (*a*) cases with active disease in the opposite lung, and this is absolute if it involves more than one-third of its extent; (*b*) if there are severe complications, such as tuberculous enteritis or bilateral renal tuberculosis. Laryngeal tuberculosis does not negative its employment unless it is very advanced. In the second group we may include (*a*) cases with poor physique, ill-nourished, and gravely debilitated; (*b*) those with feeble circulation, rapid pulse, and very low blood pressure; (*c*) severe visceroptosis is regarded by Dr. Burrell as a contra-indication; (*d*) cases complicated by other diseased conditions, notably diabetes, chronic nephritis, asthma, and advanced emphysema; (*e*) in patients over 60 (Lillingston); (*f*) both Burrell and Lillingston would exclude patients of highly neurotic tendency or with mental instability.

There remains a number of cases which are doubtfully suitable, in which the decision would depend upon the predilection and experience of the practitioner in charge. Among these we may include—

(*a*) *Early Cases.*—A few authorities regard early cases as suitable. The arguments against this have been well expressed by Dr. Clive Riviere in his book on this form of treatment. It is unnecessary in early cases which respond to sanatorium, climatic, or other medical methods within reasonable time, and since it involves some risks, which though small are not negligible, the balance seems to be against its employment in such cases. Moreover, the time it needs to be kept up and the necessary inconvenience it imposes

on the patient would hardly warrant its use as a primary method of treatment.

(*b*) In *acute cases*, especially if of broncho-pneumonic type, its employment is more than doubtful. The disease is generally widespread and bilateral and its progress rapid. Artificial pneumothorax is either inapplicable because of the extent or if tried it usually fails. In the localised lobar pneumonic type of case it may be tried cautiously if the opposite lung is not involved, if the general condition is good, and the pulse is not rapid.

(*c*) *Bilateral Cases.*—The question of bilateral pneumothorax must be considered separately. It has been shown to be practicable, but it is still on its trial.

*Technique of Artificial Pneumothorax.*

The apparatus consists essentially of (1) a special needle for puncture of the pleura. The form introduced by Dr. Clive Riviere is that usually employed for the primary induction, as being safer, owing to its blunt rounded end, while the sharper pointed needle of Saugman is used for refills. It is best to have a small piece of glass tubing connected to the needle as in an ordinary paracentesis needle, so that blood or fluid may be seen if the needle enters a vein or a pleural effusion. (2) A reservoir containing sterile air, oxygen, or other gas, generally a bottle connected with a second bottle containing water, with arrangements for adjusting their levels so that air or gas can be displaced from the reservoir by slight pressure. (3) A manometer containing coloured water, spirit, or bromoform. (4) A three- or four-way glass tube with rubber tube connexions to the reservoir, the manometer and the needle, each of which is controlled by a spring clamp. The fourth branch present in some forms is simply to allow of filling and cleaning. Several convenient forms are on the market, notably that of Dr. Lillingston and Dr. Pearson, which is simple and portable. Dr. Parry Morgan recommends the use of two manometers, and has designed a special form of apparatus with this feature. A simple form is that used by Dr. Marshall, in which the gas is contained in a rubber bag. It has the disadvantage that the quantity of gas introduced cannot be measured, nor can the pressure at which it enters be observed.

The apparatus should be thoroughly tested before use to see that all connexions are correct and that all joints are air-tight. The tubes having been sterilised previously, strychnine, ether, pituitrin, and a sterile syringe should be ready in case of shock or any other emergency.

The preparation of the patient and the actual technique of the procedure are well described by Dr. Burrell in the report to which I have already referred, and in most of the cases in which I have employed the treatment it has been carried out either by Dr. Burrell at Brompton Hospital or by Dr. R. C. Wingfield at Frimley. Usually the patients to whom the treatment is applied are already confined to bed, but in any case they should be put to bed till the pneumothorax is well established or until the temperature has subsided to normal. An aperient the night before is desirable, and an injection of morphine gr. ¼ or an equivalent dose of omnopon half an hour before the operation. The patient should lie on the sound side, comfortably supported, with the site of the proposed puncture conveniently placed for the operation. The favourite site for induction is in the mid-axillary line in any space from the sixth to the ninth, though if failure results here trial may be made in the posterior axillary line, at the base behind, or in the second space below the clavicle, though it is wise not to make more than two attempts on one day, and Dr. Burrell states that four failures in different situations render it unlikely that the treatment is practicable. The skin having been painted with iodine, a 2 per cent. solution of novocaine with a little adrenalin is used to anæsthetise the skin and tissues down to the pleura, the skin being first rendered insensitive by an intracutaneous injection, a point being selected slightly above the interspace where it is intended to insert the Clive Riviere needle. The skin now being insensitive, it is drawn down slightly so as to be over the selected spot, and then the needle is again inserted and pushed down gradually to the pleura, the remainder of the novocaine and adrenalin is slowly injected—2 c.cm. in all being used. The Clive Riviere needle attached to the apparatus is then dried in a spirit flame and inserted down to the pleura, the trocar is withdrawn, the tap on the needle is closed, and the cannula pushed through into the pleural space. If the clamp compressing the manometer connexion is not open it is released and the pressure changes are noted. If the cannula is in the pleura negative-pressure oscillations, varying with inspiration and respiration from 0 to −10 cm. or more, are apparent, and it is then safe to allow the air or gas to enter the pleura. The current teaching is now to introduce about 300 c.cm. at the first induction, taking careful note of the effect of this amount on the pressure readings, which are usually made a little lower, generally by about 2 cm., but which should remain negative. The needle is then withdrawn and the skin is again painted with iodine, but no dressing is necessary.

*Refills and Pleural Pressures.*—The sequence of the refills, the amount of air or gas introduced, and the pressures obtained are all matters requiring care, and each must be adapted to the individual case if success is to be achieved. There is no object in trying to secure rapid collapse except in dangerously severe hæmorrhage. The general rule now is only to introduce about 300 c.cm. at the induction, or such an amount as to lessen the negative pressure about 2 cm. of water. A small amount of air is less likely to cause distress to the patient, less calculated to lead to a febrile reaction from increased absorption of toxic products, and less liable to force infected secretions into other parts of the lung. If no reaction develops the first refill is generally given next day, but if there has been much rise of temperature it is well to wait till it has subsided. The amount given varies—400 c.cm. or more being introduced, or enough to lessen the negative pressure 2 or 3 cm. of water. Two days may then elapse before the second refill, three days before the third, and then longer intervals up to a week, but no definite rules can be laid down. Dr. Burrell has recently published a valuable note [1] pointing out that the object to aim at is to secure and maintain effective collapse. He tries to obtain this collapse in about a fortnight by means of five or six refills. He then endeavours to determine the optimum degree of collapse for the individual case—that is, collapse which is sufficient to keep the lesions at rest. The spacing and the amounts he determines by X ray control if possible, or by careful watching of the temperature and of the symptoms when it is not available. Refills should be given often enough to prevent the lung from re-expanding as seen by the X rays and to obviate any return of fever, or of cough and expectoration. As a rule, by the end of the first month the weekly interval may be increased to ten days, then to 14, and so on gradually to three weeks. For the remainder of the first year refills are usually necessary at intervals of three or four weeks. During the second year longer intervals may become possible, such as six weeks, and after this as long as two months. These intervals must, however, depend upon the degree of collapse and upon the rate of absorption of the gas introduced. It should be borne in mind that permitting the lung to expand by allowing too long intervals not only lessens the effectiveness of the treatment, but also tends to lead to adhesions, and thus to bring the treatment prematurely to an end. The amount it is necessary to introduce is again an individual factor and may vary from 400 to 800 or even 1000 c.cm. according to the interval, the degree of collapse, and the pressure it is desired to obtain.

[1] Brit. Med. Jour., 1924, i., 368.

The question of the intrapleural pressures to aim at is also an individual problem. There has been recently a change in the general rule in this matter. Few people now aim at securing a high positive pressure. It has been shown that effective collapse may in some cases be maintained throughout by a pressure below the atmospheric—that is to say, one still negative. On the other hand, in some cases it may be necessary to raise it considerably to secure collapse, and this may be possible without causing severe discomfort to the patient.

*Selective Collapse.*

The observation of cases with the X rays and the use of lower pressures have brought to light an interesting fact—viz., that in partial collapse the air introduced tends to accumulate more especially over the diseased area if this is localised and if the pleura is not adherent over it. This phenomenon is known as "selective collapse," and it is believed to be due to the changes in this area rendering it more susceptible to pressure variations. Parry Morgan some years ago suggested that this might occur, but its occurrence was established by Barlow and Kramer.[5] This selective collapse has been put forward as a plea for the use of lower pressures in pneumothorax treatment by Hennell and Stivelman. They suggest that positive pressures are only necessary where there are adhesions, a fixed mediastinum, active thick-walled cavities or extensive disease in all the lobes of the affected lung. The importance of selective collapse, which is an observation it is easy to confirm, is that it affords a hope that some form of partial collapse therapy may be practicable where there is localised disease, and that it may be possible to permit some parts of the diseased lung to function during treatment.

*Bilateral Pneumothorax Treatment.*

Various cautious attempts have been made to carry out this form of treatment in chronic cases with bilateral disease. Dr. Parry Morgan and a few other observers have tried it in this country, but there are insufficient data as yet to allow of an appraisal of the procedure. Barlow and Kramer [5] in America have applied the method of selective collapse to bilateral cases, and their paper is well worth study. They advise induction on the more involved side first, but if no such special reason exists, recommend that the left side should be first treated. The second side is not attempted until four or six weeks after the first side has been collapsed. The stereoscopic X ray photographs are examined after a refill to see that there is no over-inflation of this side. A few days are allowed to elapse, then 100 or 150 c.cm. are cautiously introduced into the opposite pleura and one or two refills of about the same amount are given on alternate days before the original side is again refilled. The subsequent refills depend upon the progress of the case, the effect of the inflations and degree of dyspnœa and discomfort induced. It is obvious that this form of treatment should not be tried indiscriminately, and at present it is of very limited application.

*Duration and Termination of the Treatment.*

The time for which the collapse treatment should be maintained is a difficult question to determine. Here, again, there can be no general rule. Most observers recommend that it should be kept up for at least three years. Saugman recommended that it should be terminated in the summer if possible, and that the treatment should be resumed if any symptoms of relapse became apparent. Most authorities advise that the expansion should be gradual, occasional refills at longer and longer intervals being given. It is important to remember in this connexion that as the lung expands adhesions usually form between the two pleural layers as they resume contact, and a premature termination of the treatment may render its subsequent employment impossible. Where an incompletely effective partial collapse only is obtained the treatment may have to be abandoned, or it may be that owing to increasing adhesions the lung slowly expands even against pressure and the pleural cavity becomes gradually obliterated. In the early stages the treatment should be carried out in a hospital, nursing home, or sanatorium, but after the disease is quiescent treatment may be continued at home, and the patient is often capable of returning to work.

*Risks of Artificial Pneumothorax.*

*Gas Embolism.*—The most important precaution is to make certain by the manometer readings that the needle is in the pleura before the gas is allowed to flow in. If the needle has not entered the pleura the readings will remain at zero or show slight oscillation if it is actually in contact with it. If the needle has entered the lung, there is sometimes a negative pressure without proper oscillations. In introducing air it is best to adjust the apparatus beforehand so that the air or gas is at the atmospheric pressure or just below it in order that the first few c.cm. may be drawn and not forced into the pleural cavity. With these precautions the risk of gas embolism is practically excluded. It is worth while to mention that gas embolism has occurred in the course of refills, so that the same strict care is necessary as for the induction.

Another risk is that common to any interference with the pleura—viz., *pleural shock*. It varies from slight faintness and anxiety to sudden and profound collapse or even immediate death. In its graver forms it is fortunately rare, but it is always well to be prepared for it. Pituitrin should be at once injected, other stimulants given, hot-water bottles applied, and artificial respiration carried out if breathing has ceased. Though it has most often been observed with the primary induction, it is not unknown in connexion with refills.

*Puncture of the lung* may occur if there are adhesions, and it gives rise to no unpleasant results unless the trocar enters a large vessel, when hæmoptysis may occur, but as a rule this is slight and soon subsides. It should also be suspected if no rise of pressure occurs after a considerable amount of air has been allowed to enter. If there are no adhesions puncture of the lung may lead to spontaneous pneumothorax and to subsequent infection of the pleura, especially if a caseous area or a cavity has been entered, when the result may be very serious. This risk is a very slight one if a Riviere needle be cautiously used for the induction.

*Subcutaneous emphysema* may occur, particularly if a high intrapleural pressure is produced. It is rendered less likely by the manœuvre of anæsthetising the skin over a rib above the selected interspace and drawing it down over that space when the puncture is made. It can usually be prevented from spreading by a pad and pressure over the puncture. Occasionally subpleural or mediastinal emphysema may occur, the air tracking up the cellular tissue of the neck and then spreading widely in the subcutaneous tissues. This, though unpleasant, is not serious and subsides with rest, though pain, if it occurs, may necessitate the use of morphine.

*Complications During the Treatment.*

*Pleurisy* occurs in about 50 per cent. of the cases and goes on to effusion. This is almost invariably serous unless rupture of the lung has occurred or unless the effusion becomes secondarily infected. Investigation of its cytology may show some polymorphonuclear cells in the early stages, or if secondary infection is present, but as a rule there is a marked lymphocytosis. Tubercle bacilli are often present in the fluid in very large numbers. The pleurisy is generally associated with some pyrexia which usually subsides in a few days, though occasionally it persists and is associated with progressive deterioration of the patient's condition owing to activity in the lung lesions. Before the effusion develops there may be malaise and pain. The physical signs are characteristic owing to the shifting dullness, the dead level of the fluid, and the succussion splash. The appearances in X ray examination are also striking owing to

[5] American Rev. Tub., vi., 2, p. 75.

the sharp upper level of the shadow in the erect position. The fluid may be slowly absorbed or may remain for months and become converted into a greenish purulent fluid which is sterile except for the presence of tubercle bacilli. If the fluid reaches a high level some of it may be removed and replaced with air and the pressure kept at such a level as to keep the lung collapsed if possible. The patient should remain at rest in bed for some time after the temperature has subsided. Statistics show that the occurrence of simple effusion has very little effect on the end-result. Cases with effusion show nearly if not quite as good a percentage of recoveries as those without.

*Purulent Effusion.*—A serous effusion may become purulent if it is very chronic, and this may also occur if any marked extension of the pulmonary disease occurs. Purulent effusion may require oxygen replacement from time to time. The more severe forms of pleural infection may lead to great pleural thickening and prevent later expansion of the lung or may lead to increasing adhesion as the fluid is absorbed or withdrawn. If the fluid reaccumulates frequently the pleural cavity may be washed out with some weak antiseptic such as lysoform or with collargol.

*Rupture of the lung* is a very serious complication and is more likely to occur with positive pressures. It gives rise to a pyopneumothorax with a permanent pleuro-pulmonary fistula. The patients usually become acutely ill directly after the rupture and when pus has formed the pleural cavity may be washed out with antiseptic after aspiration and gas replacement. The condition is usually fatal, but thoracoplasty done in several stages has been successful in a few cases.

*Pain, discomfort, and dyspnœa* may occur and these may be due to mediastinal displacement. Febrile reactions of varying degree occur in some cases.

### *Results.*

A sufficient number of statistics are now on record to demonstrate the real value of this form of treatment. It has restored to working capacity a large number of patients whose outlook apart from it was grave. It has prolonged life and given comfort to many other cases, and its value is the greater that it is applicable to cases with extensive disease provided that this is mainly unilateral.

## 3. METHODS OF DEALING WITH PLEURAL ADHESIONS.

The limitations imposed on the efficacy of artificial pneumothorax treatment by adhesions is strikingly emphasised by the statistics of Gravesen.[6] In 211 patients in whom this form of treatment had been attempted by Saugman and himself, he found on investigation, from three to 13 years afterwards, that in those without adhesions, thus allowing complete pneumothorax, no less than 70·2 per cent. were able to work. In cases with localised adhesions rendering the pneumothorax incomplete, only 33·3 per cent. were in this satisfactory state, while in those with more extensive adhesions, only 11·1 per cent. were capable of working. It is interesting to note that the figures for the cases with more or less complete adhesions, rendering pneumothorax impossible, are almost identical—viz., 11·8 per cent.; in other words, artificial pneumothorax is useless where adhesions are widespread.

It was to be expected that these failures would lead to a careful study of the character of adhesions and would stimulate attempts to deal with them. Investigation of X ray photographs, especially of stereo-radiograms, in cases of incomplete artificial pneumothorax reveals the fact that not a few adhesions are string- or band-like in character, others being membranous, while both may be capable of stretching. They can often be seen to drag on the lung and prevent it from collapsing completely. A third kind is the extensive surface adhesion commonly seen at the apex or at the base. This variety, if at all widespread, practically excludes the possibility of artificial pneumothorax treatment, since it is usually over the diseased part of the lung, and it is impracticable or risky to strip up such adhesions surgically.

Attempts have been made to deal with the string- and band-like or membranous adhesions by four different methods. (1) By increased intrapleural pressure. This may be effective on small or recent adhesions, but it is not devoid of risk if high positive pressures are employed. Not only may they cause pain, tightness, and dyspnœa, but there is also the risk of rupture of the lung with subsequent pyopneumothorax. Moreover, a mediastinal bulge or hernia may occur and increase in pressure may even lead to its rupture rather than to stretching or tearing of the adhesion. (2) By introducing a special tenotome through the chest wall, under careful local anæsthesia, and cutting the adhesion under control of the X rays, the adhesion being rendered taut by suitable increase of pressure of the intrapleural gas (Morriston Davies). The uncertainty of this method and the risk of hæmorrhage render it unsuitable for general use. (3) In more extensive adhesions the pleura has been opened through an intercostal space to allow of the adhesions being ligatured and cut. Post-operative hæmorrhage and empyema have been observed after this method and it seems to involve more risks than are commensurate with its advantages. (4) The procedure introduced by Jacobaeus seems the method of choice where practicable. A thoracoscope made on the principle of a cystoscope is introduced into the pneumothorax cavity through a cannula inserted usually in the posterior axillary line, the position chosen being that most convenient for observation of the adhesions. If these seem suitable for division a galvano-cautery is introduced through a second cannula, which has been inserted through an intercostal space in such a position as best to allow of dealing with the adhesions. This is usually in the anterior axillary line in the seventh, eighth, or ninth space for adhesions high up, or in a lower space for those near the diaphragm. The development of smoke in the pleural cavity may delay the completion of the operation, but can usually be dealt with satisfactorily. Jacobaeus has been successful in 75 per cent. of his cases, while Holmboe[7] and Gravesen [8] report favourably of its use. Piguet and Giraud [9] at Leysin write enthusiastically of its value, and it has been employed in several cases in this country. The operation can be done under local anæsthesia, and the risks involved are not serious if due precautions are taken. They comprise (1) hæmorrhage, which is usually avoided by using the cautery at a dull-red heat. (2) The lung may be opened owing to pulmonary tissue being prolonged into the adhesion by traction. If a cavity be opened in this manner it may lead to pyopneumothorax. This can usually be avoided by dividing the adhesion as near the chest wall as possible. (3) Pleural effusion sometimes results, but as in ordinary artificial pneumothorax cases, it does not, as a rule, interfere with the satisfactory progress of the case. (4) Surgical emphysema and temporary fistulæ may result from the puncture wounds, but are not serious. The method should be strictly limited to cases with string- and band-like adhesions, and a severe selection should be exercised as to the suitability of these. It is probable, therefore, that the number of cases to which it can be applied will be comparatively few. None the less, in experienced hands it represents a real addition to our means of treatment and we should carefully consider it in certain cases.

## 4. PHRENICOTOMY.

Theoretically section of the phrenic nerve on the affected side might be expected to be of value in securing rest to the lung, and it is claimed by some that this procedure alone reduces the lung capacity on that side by a quarter to a third, and that its effects persist for from six to nine months. Opinions differ

[6] Brit. Med. Jour., 1923, ii., 506.

[7] Tubercle, 1919, i., 1.
[8] Brit. Med. Jour., 1923, ii., 506.
[9] La Presse Médicale, 1923, i., 266.

as to its practical value by itself. It has been recommended in cases with adhesions of the base of the lung to the diaphragm, particularly those associated with cough. Mr. Morriston Davies has also found section of the left phrenic useful in left-sided cases associated with vomiting after cough. Phrenicotomy has also been employed in conjunction with other methods of treatment, notably pneumothorax, pneumolysis, and thoracoplasty. It seems worthy of more extended trial than it has yet received. The continuity of the nerve path may be severed by section, resection of a piece of its length, crushing, or by alcohol injection.

### 5. EXTRAPLEURAL PNEUMOLYSIS.

As long ago as 1892 Tuffier suggested that the diseased part of the lung might be allowed to collapse by stripping the pleura from the endothoracic fascia. This operation, to which the name of extrapleural pneumolysis has been applied, is easily effected by an incision through an intercostal space, and it has had a certain vogue since 1910. The real difficulty is the filling up of the extrapleural space left by the collapse of the lung. Attempts have been made to keep up an extrapleural pneumothorax by air injections. This often fails owing to the difficulty of retaining the air or to the accumulation of serous exudate which may become infected. More success has been obtained with fat grafts obtained from the subcutaneous tissue, omentum, breast, or from lipomata. Muscle has been used, small rubber balloons, and paraffin, but though some cases have been successful, there are many failures, either due to infection of the cavity left or to the formation of serous exudates leading to extrusion of the substance used for packing.

Separation of adhesions over the apical region only is referred to as apicolysis. Some surgeons, notably Bull of Christiania, perform apicolysis in the course of the operation of thoracoplasty after removing part of the third or fourth rib, and before dealing with the second and first ribs. On the whole, it seems that pneumolysis has given rather disappointing results, except in those where local pneumolysis has been aided by adequate fat grafts.

### 6. THORACOPLASTY.

There remains now for consideration the most effective of all the surgical methods of dealing with cases in which artificial pneumothorax fails or is impracticable owing to adhesions—viz., extrapleural thoracoplasty, which in its complete form consists in removal of segments of all the ribs from the eleventh or tenth to the first. It appears to have been first suggested in 1885 by Cérenville, and independently by Spengler. After 1907 the suggestion was taken up and developed by German surgeons, notably Brauer, Friedrich, Wilms, and Sauerbruch. The method was adopted and applied by Scandinavian surgeons soon afterwards. It received until recently little recognition in this country, except by Morriston Davies and Roquette, and it was looked on with disfavour in France, owing to its severity and mutilating character. In both countries it is now achieving tardy recognition. Two valuable papers on its technique and the indications for its employment have recently appeared in France by Profs. Bérard and Lenormant.[10]

*Indications.*—In general it may be stated that thoracoplasty is indicated in cases suitable for pneumothorax treatment in which that form of treatment is impracticable or has failed owing to pleural adhesions, but it should never be employed in such cases till the latter has been attempted. It must be remembered that even a complete thoracoplasty does not give more than three-quarters of the collapse of the lung afforded by a complete pneumothorax. Lenormant suggests that thoracoplasty is preferable to pneumothorax in cases with fistulous tuberculous lesions, either pleuro-pulmonary or pleuro-parietal, and also in cases with basal excavation, in which a partial thoracoplasty may suffice. It may also be considered in cases of severe recurrent hæmorrhage in which pneumothorax has failed.

The *contra-indications* are also practically those of artificial pneumothorax therapy, but the age limitations are more marked.

In coming to a decision as to its adoption in any given case a stricter standard as to the condition of the opposite lung and as to the general condition of the patient than that for artificial pneumothorax must be adopted and great attention paid to the condition revealed by X ray examination. Stereoscopic radiograms should be obtained if possible. A further point to bear in mind is that thoracoplasty throws the lung permanently out of action, unlike artificial pneumothorax, which can be stopped, allowing the lung to expand and re-function.

*Methods.*—(1) The original Brauer-Friedrich operation, a development of Schede's operation for empyema, consisted of a large curved incision from near the sternum below the clavicle down to the tenth rib and up to the level of the second dorsal spine behind. It allowed of extensive removal of all the ribs from the first to the tenth. It proved too severe for general use and was associated with a heavy early mortality. (2) The "pillar resection" or rib mobilisation of Wilms was introduced in 1911. It was a two-stage operation with an interval of three or four weeks. At the first, small pieces of the posterior part of the first seven or eight ribs were removed, while at the second, pieces of the anterior ends or of the rib cartilages of the first six were cut away. This, as a rule, gave insufficient collapse and both it and the Brauer-Friedrich operations are now discarded and are chiefly of historical interest. (3) The third form is that generally employed at the present time. It was introduced by Sauerbruch and adopted by Saugman, who did much to popularise it. A long hooked paravertebral incision is made, its lower end curving along the tenth rib to the posterior axillary line. The ribs are exposed by cutting through the muscles and drawing the scapula out of the way. Sections of the ribs from the tenth to the first are excised. Three centimetres or more of the first rib should be removed if possible. The amounts increase to the seventh or eighth and lessen to the tenth, but may increase progressively to this rib. A part of the eleventh may be taken, but it is better to leave it if possible as there is less likelihood of "diaphragmatic flutter." A point of great importance is that the place of section posteriorly should be as near the transverse process of the vertebra as possible. A total of 120 to 150 cm. of rib may be removed. The question as to whether the operation should be done in one or two stages, and as to the choice of anæsthetic, are matters of technique which vary with different operators. The general tendency is towards the two-stage form and the mortality of this is less. It is noteworthy that more and more surgeons are coming to employ general anæsthesia, usually gas and oxygen, combined with local anæsthesia to lessen shock.

Great care is necessary in the preparation of the patient for operation. He should be rested in bed and appropriate treatment directed to the circulatory and digestive systems, including the administration of sugar. Cough may be promoted shortly before the operation if there are cavities. Morphine or omnopon and atropine are usually given just before the anæsthetic. The after-treatment is even more important. Firm strapping and support during cough are essential to promote collapse and obviate "mediastinal flutter" or flapping movement of the mediastinum with respiration. Pain is often a distressing feature and may require analgesic drugs. Some surgeons claim that alcohol injection of the intercostal nerves during the operation obviates this. Dyspnœa is not infrequent but soon subsides. Digitalis, camphor, adrenalin, and oxygen may be used when necessary. A febrile reaction is common during the first few days after the operation. Bull's observations tend to confirm the general opinion that this is due to increased absorption of toxins owing to the disturbance and collapse of the lung. After healing some form of

[10] Journal de Chirurgie, xxii., 3, pp. 225 and 240.

corset support or bandage is worn, and if the patient is afebrile, exercises are devised to restore movements of the arm, which are usually at first limited. The patient should undergo a period of sanatorium treatment.

*Risks of the Operation.*—The immediate risks are those of shock, exhaustion, and wound infection, but the immediate mortality of the operation in experienced hands seems to be small, even as low as 2–4 per cent. The total mortality in the Scandinavian statistics is about 10 per cent., including the earlier cases. The later operative mortality is chiefly due to aspiration pneumonia, or to the spread of the disease in the opposite lung. The mortality is much greater in right-sided than in left-sided cases.

*Results.*—The recorded results are naturally somewhat varied. Of Saugman and Gravesen's 69 cases, 31, or 44·9 per cent., were fit for work at periods of from two to seven years after operation. In Bull's cases the number of cures after three years' observation amounts to one-third. Brauer's figures are very similar; recovery occurred in about 30 per cent., and in another 30 per cent. there was considerable improvement, while in 10 or 15 per cent. the disease progressed in the opposite lung. Thoracoplasty must therefore be admitted to have a useful place in treatment, but in view of its severity and of the fact that its effects are permanent, great care must be exercised in its application.

*Modifications.*—Various modifications of the original method are employed. A partial thoracoplasty is sometimes carried out for localised disease, either with or without pneumothorax, and it is sometimes recommended to cut the phrenic nerve shortly before the operation.

### 7. Other Surgical Measures.

The operation of lobectomy or excision of the diseased part of the lung is no longer employed in this disease. Ligature of a branch of the pulmonary artery has been carried out in hæmorrhagic cases and as a means of inducing fibrosis in a lower lobe. This operation is also now practically discarded. The treatment of the surgical complications of pulmonary tuberculosis such as fistula, tuberculosis of the epididymis, kidney, glands, and spine, are all matters in which we have to invoke the aid of the surgeon. The question as to the advisability of operation in such cases largely depends upon the stage of the pulmonary disease. Only operations of urgency or of necessity should be undertaken in patients with quiescent tuberculous disease, since general anæsthesia seems not infrequently to activate dormant lesions. Wherever possible operations should be done under local or spinal anæsthesia. At the same time, the experience of thoracoplasty proves that patients with active disease can take general anæsthetics such as gas and oxygen without undue risk.

### 8. Rôle of Surgery in the Treatment of Pulmonary Tuberculosis.

The boundary zone where medicine and surgery meet is a fascinating territory to explore, but one with pitfalls. In the surgery of the stomach, duodenum, gall-bladder, appendix, and bowel, the most dramatic results are obtained in cases in which medicine has failed most lamentably. The surgery of pulmonary tuberculosis promises to give like results, but it should be clearly recognised that surgery in this disease is not, and cannot be, a substitute for medical measures, but that it may be a valuable adjunct. This branch of surgery, perhaps more than any other, demands an understanding between the physician and the surgeon and a knowledge on the part of the surgeon of the medical problems involved to a greater extent than any other. The operation carried out must be devised to meet the needs of the individual patient. Surgery cannot here be the first line of attack, but it can be a very helpful aid. We may hope that a truer perspective will obtain here than was the case in the early days of gastric surgery.

### Conclusion.

It is now my duty to express my thanks to my friends and colleagues who have helped me in preparing these lectures, particularly to Dr. R. C. Wingfield, who has helped me in many ways and lent me the radiograms and photographs I have shown; to Mr. A. Tudor Edwards for his criticism and advice in regard to the operative procedures; and to Dr. D. E. Bedford for assistance in looking out references. Lastly, I have to express to yourself and the Council of this Society my appreciation of the honour you have done me in asking me to deliver these lectures, an honour as gratifying as it was unexpected. Although I feel that I owe this distinction to my association with the two hospitals in which I worked as a student and which it is now my privilege to serve, my pleasure is none the less great. Though I have not been able to present anything new or dramatic, I like to think that my choice of subject at least would have been agreeable to the distinguished physician and philanthropist whose memory we commemorate in these annual lectures. In his "Hints for the Establishment of a Medical Society in London" he wrote: "The principal part of our knowledge must be ever derived from comparing our own observations with those of others." This I have tried to do in regard to this disease, and in preparing this review of the methods of treatment now in use, I at least have been greatly the gainer.

---

*From the Royal School of Medicine, Cairo.*

## THE INCIDENCE OF CANCER IN EGYPT.

### An Analysis of 671 Cases.

By ROBERT V. DOLBEY, M.S. Lond., F.R.C.S. Eng.,
director of the surgical unit; surgeon to the kasr-el-ainy hospital, cairo;

and

A. W. MOORO, F.R.C.S. Eng.,
surgical registrar and tutor to the hospital.

An inquiry into the incidence of cancer and malignant disease in general, in Egypt, will help to throw some light upon the history, ætiology, and probable causation of this disease. Not only are we dealing with a population of an entirely different race from any in Europe, but we have also a considerable admixture of the Negroid and Negro-Arab to consider. The diet of the population, and, above all, the prevalence of parasitic disease in the country, are of value in the consideration of the relation of malignant conditions to diet and to parasitic disease. Ninety per cent. of the fellaheen or country people of Egypt probably suffer at one time or another from bilharzia, ankylostoma, and ascaris, or a combination of all three. There is now statistical evidence that the picked men of the fellaheen population who enter the army or the police are infected with these three diseases to the extent of 85 per cent. The more cosmopolitan urban population of Egypt, which numbers about 20 per cent. of the whole, is much less uniformly affected.

The habits and customs of the people are also utterly different from those of England or America, but in spite of these differences and, particularly, of the amount of parasitic disease, the total number of cases of malignant disease in proportion to population is probably very much less than in England. There are no complete statistics; but the comparison of the number of cases attending the main hospital of Egypt with those attending a general hospital of the same size in London gives us this impression. But if the total amount is less, the incidence and anatomical distribution of cancer is entirely different in Egypt from that of more temperate regions. In the first place, the incidence among the various races and racial elements in Egypt appears to be strictly in accordance with the racial proportion in

the population. The Negro from the Sudan with woolly hair and coal-black skin, and the Berberine, a Negro-Arab, with less pigment in his skin and less kink in his hair, are as often affected as the brown-skinned flat-black-haired Egyptian, or even the fair Turk and Armenian. Our experience of cancer in negroid peoples seems, therefore, to be different from that of other observers.

*Incidence of Disease from Hospital Figures.*

We have analysed all the cases of cancer and malignant disease (671) that have attended this (Kasr-el-Ainy) hospital in the last four years. This hospital has 400 available surgical beds, a yearly in-patient population of 13,000, and a yearly out-patient attendance of 122,000, drawing patients from the whole of Egypt. Thus it reflects the comparative incidence of disease in the whole country.

Epithelioma of the scalp is definitely more common than in England or America (30 cases). An explanation for this may be found in the habit of shaving the head, the great incidence of favus and other irritating skin conditions, and the intensity of the actinic rays of the sun. Sarcoma of the flat bones of the skull is also definitely more common (10 cases); this is in accord with the great prevalence of sarcomata of the long bones (49 cases), and of the bones of the face, especially of the upper and lower jaws (23 and 16 cases respectively). Myelomas of the long bones, the jaws and clavicles, are in proportion to the prevalence of periosteal and endosteal sarcomata. The malignancy of sarcoma of the long bones is not so great, however; gland involvement and metastatic growths are late and comparatively rare. There are a large number of cases in which a general cachexia or sepsis has killed before secondary deposits have occurred. This is, in our opinion, a very marked feature of Egyptian sarcoma and of cancer. Melanotic sarcoma is rare, possibly owing to the general distribution of pigment and to the absence of scattered areas of pigment, as moles and freckles, among our people.

Rodent ulcer (41 cases) is a very common condition in Egypt. It presents no unusual features, and may be attributable to the exposure of the fellaheen to sun in their field work. The region of the orbit is most commonly affected. Malignant epulis is probably not more common than elsewhere; but there is a very common condition of epithelioma of the lower jaw that is entirely different in its onset and its development from any in our experience elsewhere. This disease commences in the alveolar margin of a tooth that is intrinsically healthy, but has a marked deposit of tartar and food débris at the junction of tooth and alveolar margin. In this respect it is essential to say that, except among the more leisured classes, there is no system of brushing teeth in Egypt, not even with a twig or piece of wood as is the case in the Far East. Egyptian adult teeth of the labouring classes, though, as a rule, free from caries, are yet filthy in that there are gross collections of tartar and food débris at the neck of the teeth, and in very many cases the gums are swollen, septic, and inflamed. True cases of pyorrhœa are not uncommon. It is also interesting to observe the prevalence of true dental caries and alveolar abscesses in the jaws of Predynastic, Dynastic, and Ptolemaic Egypt. Through all the ages from 2000 years B.C. the dental treatment of ancient Egypt was deplorable. Whenever the pulp cavity of an ancient Egyptian tooth had been exposed an abscess had formed, and no attempt apparently been made to extract even the most decayed teeth. They are left in situ with all the evidences of years of abscess formation and new inflammatory bone.

The epitheliomatous conditions of the jaws in modern Egypt, as referred to above, are remarkable for the rapidity of their development, the uniform commencement in the alveolus of a tooth, the rapid separation of a sequestrum of the whole thickness of the alveolus carrying from two to six teeth; and, finally, the often complete absence of glandular involvement even in the submaxillary region. Were it not for the histological appearances one would look upon this condition as a septic osteomyelitis of the jaw. Death occurs from aspiration pneumonia, and not, as one would expect, from hæmorrhage from the vessels of the floor of the mouth.

*Cancer of the Lip, Tongue, and Œsophagus.*

Cancer of the lip is not common (31 cases). There appears to be no relation between this form of cancer and smoking. Tobacco is smoked, as a rule, by the country people by bubbling the smoke through water in a "hookah," the mouthpiece of which is of smooth and polished amber, or by rolled cigarettes. The young urban population, however, and the leisured classes of Egypt now affect the cigarette, but they exhibit a much less marked tendency to lip cancer than the fellaheen who work in the sun all day.

Cancer of the tongue is not common (25 cases), and is characterised by special features. It has a slow development; it is not associated with evidences of syphilis; glandular involvement is very late indeed even in the submaxillary region, and death from secondary hæmorrhage from the lingual or carotid vessels comparatively unknown. We have never seen cancer of the tongue develop in any but a very septic mouth; nor have we been able to discover in Egypt any cases of the typical chronic superficial glossitis of that organ or any evidences of gross tertiary syphilis in connexion with tongue cancer. Tooth plates and artificial dentures are not indulged in by the fellaheen. Death in cancer of the tongue is usually a result of aspiration broncho-pneumonia.

Cancer of the œsophagus is very rare (six cases). The operation of gastrostomy for pharyngeal and œsophageal cancer has only been performed three times in five years. Malignant disease, intrinsic or extrinsic, of the larynx is much more common (29 cases). Tonsillar cancer is almost unknown. No case of chloroma in children has been observed during the last five years.

*Cancer of Breast and Cervix.*

Cancer of the breast (75 cases) presents no unusual features in its incidence, type, or development from that observed elsewhere. It is sometimes difficult to determine the age-factor, as many of the fellaheen do not know their true ages. Breast-feeding among babies is common up to two or three years. To wean a child before that time is almost tantamount to a death sentence. Feeding-bottles are, in Egypt, fatal to babies; but fortunately they are rarely used among the country people. Wet-nurses are the rule. Many mothers develop acute mastitis and mammary abscesses. We gather the impression that cancer of the breast is more commonly of the rapidly growing encephaloid variety, and that fungation is perhaps more common in Egypt than in England or America. But this may be owing to the fact that cases of breast cancer seldom come to hospital in any but an inoperable condition. Two cases only of fibro-adenoma or simple tumour of the breast have occurred in this period of three years, although careful search for this condition has been made in all our women patients. Nor have any cases of chronic interstitial mastitis, with or without cystic degeneration, been observed. This appears to negative any causal relation between the degenerative changes in the involuting breast of the woman of 40 and the development of cancer.

Cancer of the cervix (19 cases) and of the body (six cases) of the uterus does not appear to differ in appearance or type from that observed elsewhere. It is, however, a very much rarer condition in Egypt than in England or America. These cases arrive usually in an inoperable state. As the vast majority of our women are married and have borne children, we can draw no conclusions in regard to the influence of pregnancy upon malignant conditions of the breast or uterus.

*Cancer of Digestive Tract.*

It is in the digestive tract that the incidence of cancer is most remarkable. There is practically no cancer of the stomach in Egypt, only eight cases in three years; and, as there is also very little gastric ulcer, six cases in the same period, there appears to be a definite causal relationship in a negative way between the two conditions. Secondary cancer of the liver, as one would expect, is rare (four cases); but primary cancer originating in the gall-bladder and the gall-bladder fissure of the liver is much more common (ten cases). As the incidence of gall-stones in Egypt, six cases in this period of three years, is negligible, in spite of the fact that typhoid fever is endemic, there does not appear to be any connexion between gall-stones and the development of carcinoma of the gall-bladder.

In the large intestine, again, cancer is very rare in spite of the universal parasitic infection of the colon, and, especially, the prevalence of bilharzial growths and papillomata. These do not appear to present any tendency to malignant development. Cancer of the rectum (seven cases) is comparatively rare, notwithstanding that it is the most common site for bilharzial papillomata and growths with the consequent irritation of the lateral-spined ova of this parasite.

In the urinary bladder, however, the incidence of malignant disease, both carcinoma and sarcoma, as a sequel to the irritation of the terminal-spined bilharzia ova in the foul and alkaline bladders of cystitis is extremely common (51 cases). But we know of no cases of epithelioma of the kidney pelvis or of the ureters, in spite of the common infection of the whole urinary tract with bilharziasis. We believe that the alkalinity and sepsis of an inflamed bilharzial bladder is partly responsible for the development of carcinoma in that organ. We have seen no cases of the development of cancer in a non-inflamed bilharzial bladder. The large intestine is even more exposed than the bladder to the irritation of parasites, but the reaction of the contents of the bowel is usually acid, and chronic sepsis, such as is found in cystitis, is not present.

Malignant conditions of the kidney, including hypernephroma, are also extremely rare. The prostate, however, is a very common seat of cancer, but simple enlargement of that organ is much less frequent than in England or America. There are very seldom indeed any cases of chronic prostatitis or gleet among the fellaheen. Early marriage seems to be responsible for the non-development of both these conditions, though, we must admit, the severity and complications of gonorrhœa among Egyptians are much less marked than in Europeans resident in Egypt. Gonorrhœal and syphilitic infections contracted from the same source, for example, a Levantine woman, are infinitely more severe in a Northern European than in an Egyptian. There can be no acquired immunity to syphilis of very long standing, for there are no evidences of syphilis in the bones of Predynastic, Dynastic, or Ptolemaic Egypt. It is probable that cancer of the prostate is usually an extension of the disease commencing in the trigones of the bladder from pre-existing bilharziasis.

*Cerebral Tumour.*

Cerebral tumour is comparatively very rare in Egypt (11 cases). Ancient Egyptian skulls show definite evidences of malignant conditions; but in the majority of cases these appear to be extensions from epitheliomata of the scalp or from rodent ulcer of the face. Malignant disease of the thyroid gland is not uncommon (15 cases). As a primary growth it is not associated with disorder of function of that gland; but in two cases where there were secondary deposits of breast cancer in the thyroid gland there were marked evidences of hyperthyroidism. In this connexion it is interesting to observe that although there are a large number of cases of simple parenchymatous goitre, adenomata and cysts (122 cases), in Egypt we practically never see a case of exophthalmic goitre or of cretinism among the country people (one case of each in three years).

*Diet of the Egyptians.*

The diet of the fellaheen who comprise 80 per cent. of the population of the country is almost entirely vegetarian. Meat is usually eaten once a week only; and goat or mutton is the meat of choice. Swine flesh, as in all Moslem countries, is forbidden. So is alcohol in any of its forms. Cheese, milk, eggs, and beans form a large proportion of the daily diet. The green tops and roots of vegetables, such as radishes, are constituents of nearly every meal. Potatoes are not grown in Egypt, and are only eaten in the towns. Expectant mothers and lying-in women eat chicken for two weeks. As a rule the pigeons and chickens are sent into the towns to be sold.

Pigeons are kept chiefly for the value of their guano in growing melons. Tomatoes form a large ingredient of the common food. Onions, as would be expected, are a constant feature of every day diet. Fruits, with the exception of dates, fresh figs, apricots, and, especially, water melons are not commonly eaten except in the summer months. There is no method of preservation of food by smoking, salting, or drying in the sun, or by any chemical means. Nor is frozen or chilled meat ever eaten by the vast majority of the people. On the occasions of ceremonial feasts a large amount of animal food is eaten. This chiefly consists of mutton or goat, chickens and turkeys; but the average diet of 70 per cent. of the people for six days of the week is eggs and cheese and herbs, onions, beans, tomatoes, unleavened bread, and the green tops of vegetables, especially of the radish family.

But it is interesting to observe that, in the towns where the Egyptian people, often of the more leisured classes, have adopted European habits of food and cooking they have acquired European diseases. Egyptians of the richer classes of society, whose inclination or work keeps them in the cosmopolitan towns, do develop gastric and duodenal ulcer, gall-stones, and appendicitis, and with the development of these surgical aspects of gastro-enteritis also comes a predisposition to gastric and intestinal cancer, conditions which are almost unknown to their simpler compatriots in the country districts.

*Conclusions.*

It may be objected that the experience of one hospital is no true criterion of the incidence of malignant disease in a whole country. But we can rightly claim that Kasr-el-Ainy is the great medical and surgical court of appeal for the whole of Egypt. We draw from the whole of the Nile valley; and we are peculiarly situated so as to obtain as clear a view upon the prevalence of malignant disease as the absence of full statistical evidence will allow.

The conclusions to which we have come as a result of our daily work and the examination of these cases are these:—

1. The incidence of cancer among Negroes is not essentially different from that of Negroid, Negro-Arab, or the Egyptian races.

2. There is no causal relationship between cancer and parasitic diseases. It appears to be merely the irritation of the parasites and their ova and embryos and the coincident chronic sepsis which is responsible. But the incidence of cancer in relation to bilharzia of the bladder suggests that, only in an alkaline-infected medium such as the stagnant urine of cystitis in bilharzial bladders, does the irritation of ova produce cancerous changes. In the renal pelvis, the ureter, and the intestinal canal the incidence of parasitic disease is almost as great as in the bladder, and yet the development of cancer is almost unknown.

3. There seems to be no connexion between cancer of the tongue and syphilis.

4. Malignant disease affecting the bones, the skin, and skin appendages appears to be definitely more common than in Europe or America, and may be attributed, as far as the skin is concerned, to the actinic rays of the sun of Egypt.

5. There is a definite relationship, from a negative point of view apparently, between the incidence of gastric ulcer and gastric cancer.

6. There is no relation, presumably, between gall-stones and cancer of the gall-bladder or the gall-bladder fissure of the liver. Nor is typhoid fever, in Egypt, a predisposing factor in the production of gall-stones.

7. The comparative incidence of cancer of the uterus and breast in married and unmarried women does not allow of any statistical conclusions to be drawn, in Egypt, where the vast majority of all women have been married very early, usually some time before 20 years, and have borne children. The comparative absence of non-malignant conditions of the breast, such as fibro-adenoma, and, especially, chronic interstitial mastitis of the involuting breast, with or without cystic degeneration, is remarkable and inexplicable. The latter state is looked upon by some pathologists as a precancerous condition; but our experience in Egypt seems entirely to negative any relation whatever between chronic interstitial mastitis, which is practically unknown, and cancer of the breast, the incidence of which is probably the same in proportion as in Europe.

8. The progress and development of individual cases of cancer is definitely different in Egypt from that of England or America. The progress is, as a rule, less rapid, the involvement of glands less marked, and the development of metastases more infrequent. There appears also to be a form of epithelioma of the alveolar margin of the jaw that exhibits most unusual features (vide supra).

9. There appears to be some definite relation between cancer and diet. Simple vegetable foods, the absence of preserved, chilled, or frozen meat of any kind, the lack of jams or fruit preserved in sugar, and the complete avoidance of alcohol in any of its forms seem to be consistent with the non-development of cancer of the intestinal tract. While the adoption of European foods, alcohol, and preservatives by the same people in the cosmopolitan atmosphere of towns definitely appears to be responsible for gastric and duodenal ulcer, gall-stones, appendicitis, and cancer of the digestive tract.

10. The almost complete absence of functional nervous disease among the simple fellaheen, and, indeed, of organic disease of the nervous system also, has, we consider, a most important bearing on the development of cancer in Egypt. For diet alone will not serve to explain the incidence of cancer. Nor can the use or abuse of alcohol or tobacco be called upon to account for the discrepancy between Egyptian and European cancer. The whole of pagan Africa seems to have learned how to ferment corn as soon as it learnt how to grow it, though the use of alcohol, in the form of native beer or spirit, was usually reserved for ceremonial occasions. But the incidence of cancer appears to be the same in the pagan African from the Southern Sudan as in the non-alcoholic Moslem Arab or Egyptian.

One great and compelling cause for the distribution and incidence of cancer lies, we believe, in the relative freedom of the fellaheen of Egypt from nervous diseases, functional or organic. This also serves to explain the absence of exophthalmic goitre or cretinism in a country where simple goitre is so common. It also explains many of the other contradictions in the surgery of Egypt. The industrial revolution of the nineteenth century has passed Egypt by. Rural Egypt has hardly changed in 3000 years. The internal-combustion engine, the bicycle, the sewing machine, electricity, the telephone, the daily paper, the printing press, or wireless telegraphy have not happened as far as the majority of the fellaheen are concerned, for 75 per cent. of them cannot read or write. None of these advances in civilisation have altered their lives to any great degree. The only obvious change in the life of the fellaheen in 3000 years, probably, lies in the substitution of paraffin as an illuminant for the primitive bean oil. There is an absence of financial stress and strain, though there is great poverty. The Egyptian fellah, and he forms 80 per cent. of the population, puts his savings into such objective and solid investments as land and cattle. For him there are few uncertainties in regard to seasons. The Nile flood has taken all worry and anxiety from him in that respect. His buffalo is immune to cattle plague as it is, relatively, to tubercle. To each fellah is his reward according to his toil. Money to him does not represent a source of credit or even a medium of exchange; it is an object in itself to hoard or to bury, but never to lend at usury. Stocks and shares and cotton futures mean nothing to him. So the wear and tear and nervous strain of modern twentieth-century life do not affect him. There is very much more, in all probability, than an accidental relationship between the almost complete absence of functional nervous disease and hysteria among the fellaheen and the rarity of abdominal cancer, of symptomatic enteroptosis, of mucous colitis, and the whole train of subjective nervous phenomena which Arbuthnot Lane embraces under the heading of intestinal stasis.

The psychology of Egypt is totally different from that of England or America as a whole. There are no suppressed emotions or complexes in the Near East or the Mediterranean littoral; no need for psycho-analysis. In the presence of death, grief is overwhelming. Mourners tear their clothes and hair, wring their hands, and express their sense of loss in torrents of tears. Fear expresses itself in terms of panic-stricken flight, religion in wide-eyed frenzy and fanaticism on occasion. There is no reserve, no disciplined dry-eyed suffering, though there is a fine dignity in the Orient; no stoicism, though there is an admirable endurance of pain. We have no gastric invalids in Egypt, no nervous dyspepsias, no hypochondriacs, no valetudinarians, except among the student and leisured classes; and that is perhaps why we have, comparatively, no gastric ulcer, no gall-stones, no appendicitis, and no gastric cancer.

## AN UNEXPLAINED DIAZO-COLOUR-REACTION IN URÆMIC SERA.

BY C. H. ANDREWES, M.D., M.R.C.P. LOND.,
LAWRENCE SCHOLAR, ST. BARTHOLOMEW'S HOSPITAL.

*(From the Wards and Laboratories of the Professorial Medical Unit, St. Bartholomew's Hospital.)*

THERE have been numerous recent studies in the literature, especially in Germany, on Hymans van den Bergh's application of Ehrlich's diazo-reaction to the study of bilirubin in the blood-serum. The technique of this test has been described in this country by McNee.[3 4] Briefly, it consists of the addition of a freshly made mixture of diazotised sulphanilic acid and sodium nitrite to the serum; a pink colour due to azo-bilirubin may appear either at once (direct reaction); or only in alcoholic solution, after removal of the protein (indirect reaction).

I have lately studied this test in 184 patients, mostly suffering from jaundice or some condition affecting the liver. The series included, however, "controls" suffering from other diseases; and it is with 16 patients suffering from nephritis that this note deals. It was found in performing the indirect test (in alcoholic solution) on the serum of certain of these patients that an orange-buff colour appeared. This gradually deepened over a period of 24 hours. At the end of this time it seemed possible that the

colour was due to azo-bilirubin "gone wrong"; so the solution was made alkaline, in order to test for the green colour which azo-bilirubin has in alkaline solution. Quite unexpectedly a beautiful cherry-pink colour appeared, and after lasting for a few minutes faded away. Similar results were obtained in at least eight patients with uræmia, and in no other patient. It was specifically looked for in at least 22 other patients suffering from various diseases. I can find no reference to this colour-reaction in the literature.

The characters of the reaction are as follows: The colour differs from that given by bilirubin (1) in being buff instead of pink; (2) in coming very slowly, even in the presence of alcohol; (3) in turning pink instead of green on being made alkaline. The reaction does not take place satisfactorily in aqueous solution. The buff colour begins to appear in a few minutes and its rate of development is proportional to the depth of colour ultimately reached. The pink colour is brought out on adding alkali after 24 hours, or earlier if the buff colour is very deep. Caustic soda must be the alkali used; ammonia and sodium carbonate do not cause a good pink to appear. The pink colour persists for from a few seconds to over half an hour; the deeper it is the longer it lasts. Some nephritic sera give a faint buff colour but no pink on adding alkali, perhaps because the substance is too dilute.

### *Clinical Aspect of the Reaction.*

The table of the clinical results shows that it occurred only in patients with severe uræmia; all those giving it had at least 220 mg. of urea per 100 c.cm. in their blood. Their uræmia was due to varying causes—hydronephrosis, polycystic disease, contracted red kidneys, contracted white kidneys. A positive result was not necessarily associated with twitching or convulsions; in other words, it occurred in any of the clinical types of uræmia.

*Table showing Clinical Results.*

| Case. | Sex. | Age. | Date. | Bilirubinæmia. | Buff. | Pink with alkali. | Twitching or fits. | Blood-urea mg. per 100 c.cm. | Basis of diagnosis. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | F. | 50 | 12/9/23 | N.* | —* | —* | 0 | 280 | P.M. |
| 2 | M. | 60 | 25/6/23 | Sn. | + | + | + | 400 | P.M. |
| 3 | M. | 14 | 24/6/22 | .. | —* | —* | 0 | 160 | Clin. |
| 4 | M. | 53 | 20/7/22 | O.n. | —* | —* | 0 | 103 | P.M. |
| 5 | M. | 33 | 25/4/23 | N. | + | + | 0 | 500 | P.M. |
| 6 | M. | 46 | 25/4/23 | .. | + | 0 | + | — | |
| 6 | M. | 46 | 28/4/23 | .. | + | + | 0 | — | |
| 6 | M. | 46 | 11/5/23 | Sn. | + | 0 | 0 | 470 | |
| 6 | M. | 46 | 24/5/23 | .. | + | + | 0 | — | P.M. |
| 6 | M. | 46 | 2/6/23 | .. | + | + | + | — | |
| 6 | M. | 46 | 6/6/23 | .. | + | + | + | — | |
| 6 | M. | 46 | 9/6/23 | .. | + | + | + | 600 | |
| 7 | ? | ? | 28/4/23 | N. | 0 | 0 | 0 | 40 | Clin. |
| 8 | M. | 21 | 30/4/23 | Sn. | + | + | ? | 250 | P.M. |
| 9 | M. | 15 | 10/5/23 | .. | 0 | 0 | 0 | 60 | Clin. |
| 10 | M. | ? | 10/5/23 | N. | ? + | 0 | 0 | — | P.M. |
| 11 | F. | 27 | 14/5/23 | Sn. | 0 | 0 | 0 | 275 | |
| 11 | F. | 27 | 15/5/23 | .. | 0 | 0 | 0 | — | P.M. |
| 11 | F. | 27 | 19/5/23 | .. | ? 0 | 0 | 0 | ? > 275 | |
| 11 | F. | 27 | 20/5/23 | .. | + | 0 | 0 | — | |
| 12 | M. | ? | 25/5/23 | N. | ? + | 0 | 0 | 170 | Clin. |
| 13 | M. | 41 | 20/6/23 | Sn. | + | + | 0 | 650 | Clin. |
| 14 | F. | 60 | 25/6/23 | .. | + | + | 0 | 300 | P.M. |
| 15 | F. | 38 | 4/9/23 | .. | + | + | 0 | — | P.M. |
| 16 | M. | 53 | 29/7/23 | .. | + | + | + | 220 | Clin. |

N., normal. N.,* normal (½ unit). Sn., subnormal. O.n., over normal (2 units). —*, not looked for.

*Comment.*

*Case 1.*—Heart failure + nephritis.
*Case 2.*—Gout. Hepatic cirrhosis.
*Case 4.*—? Yellow conjunctivæ on admission.
*Case 6.*—Polycystic kidneys.
*Case 8.*—Rose Bradford kidneys.
*Case 9.*—More chloride than nitrogen retention.
*Case 10.*—Pyelonephritis.
*Case 11.*—Acute arthritis and pericarditis (rheumatic ?) with interstitial nephritis. No symptoms of uræmia.
*Case 12.*—Enlarged prostate.
*Case 14.*—Double hydronephrosis.
*Case 15.*—Small red kidneys.

It will be seen that patients dying of definite uræmia always showed this reaction. Case 11 did not show it and clinically appeared to be dying more of her acute infection than of failure of renal function. In some patients, such as Case 6 on two occasions, and Case 11 on one occasion, the yellow buff colour appeared, but no pink on alkalinising. The diazo-reagent, if left overnight, goes yellow by itself (but not pink on being made alkaline later). While I do not think this has any bearing on the colours obtained, I have refrained from laying any stress on a colour which did not go pink on subsequently adding alkali. Normal sera give a yellowish colour with the diazo-reagent in alkaline solution; the buff colour of the reaction described above develops in acid or neutral solution.

### *Results of Other Workers.*

Van den Bergh [5] found that a hypobilirubinæmia was the rule in nephritis. I was able to confirm this; in the table above, the title "subnormal" means that there was too little bilirubin in the serum for accurate measurement. Feigl and Querner [2] found that there was usually very little bilirubin in the serum unless there was heart failure as well. Beth [1] considers that bilirubinæmia is an important diagnostic point between malignant nephrosclerosis and chronic nephritis. In the first case he finds a bilirubin value above normal; in the second case, little or none.

### *Problem of Causation of the Reaction.*

To what is the buff-and-pink colour-reaction due? Normal urine does not give the reaction, so that unless the reaction is inhibited by something else in the urine it is not due to a normal urinary constituent. It is not due to urea, since its intensity does not go hand in hand with the blood-urea; moreover, urea gives no colour with the diazo-reagent in acid or alkaline solution, in watery solution, or when mixed with serum. Nor is the reaction given by uric acid or creatinin. It is not due to any substance of the nature of a protein. It still occurs after boiling for a minute, after precipitating the protein with alcohol, or after boiling the alcoholic solution and filtering. After distilling off the alcohol from an alcoholic solution, the biuret test was negative. This diazo-reaction does not behave in the same way as that given by urochromogen or antoxyproteic acid. I was unable to exclude an amino-acid as the cause of the reaction. It must be mentioned that on two occasions where the serum gave a positive reaction, none was obtained in the cerebro-spinal fluid. In one case, however, giving a very deep colour in the serum, a faint buff (and pink on alkalinising) was obtained with the cerebro-spinal fluid, which was practically uncontaminated with blood.

I also examined the sera of three rabbits kindly given me by Dr. C. C. Twort. One of these had a growth in its pharynx, had taken no fluid for a day or two before its death, and died with a blood-urea of 300 mg. per 100 c.cm. Two others were suffering from nephritis and died with blood-ureas of 300 and over 100 respectively. All three of these sera gave a yellowish-buff colour (not given by normal rabbit sera), but no pink on adding alkali.

### *Summary.*

The serum of patients with a severe grade of uræmia contains a substance which gives a characteristic colour-reaction with Ehrlich's diazo-reagent. The nature of the substance is at present undetermined. The observations of other workers that the serum-bilirubin is below normal in nephritis are confirmed.

### *References.*

1. Beth, H.: Wien. Arch. f. inn. Med., 1922, iii., 309.
2. Feigl, J., and Querner, E.: Zeitschr. f. d. gesamte exp. Medizin, 1919, ix., 153.
3. McNee, J. W.: Brit. Med. Jour., 1922, i., 716.
4. McNee, J. W.: Quart. Jour. Med., 1923, xvi., 390.
5. Van den Bergh, A. A. Hymans: Der Gallenfarbstoff im Blute, Leiden, 1918.

# EXCISION OF THE RECTUM.

## ABDOMINO-VAGINAL AS AN ALTERNATIVE TO ABDOMINO-PERINEAL EXCISION.

BY VICTOR BONNEY, M.S., M.D., B.Sc. LOND., F.R.C.S. ENG.,

ASSISTANT OBSTETRIC AND GYNÆCOLOGICAL SURGEON, MIDDLESEX HOSPITAL; SURGEON TO CHELSEA HOSPITAL FOR WOMEN, ETC.

I COMMEND the operation I am going to describe to the consideration of those who practise abdomino-perineal excision of the rectum as an alternative to the latter operation under certain circumstances.

In the early part of last year a female patient was sent to me on account of a mass behind the uterus. When the abdomen was opened the mass proved to be a carcinoma of the rectum, about an inch above the bottom of Douglas's pouch. I closed the middle-line wound, performed colostomy as high up the pelvic colon as was feasible, and proceeded to consider the best way of dealing with such growth in a feeble woman between 60 and 70 years of age. I decided that she would probably not stand a classical abdomino-perineal resection, and I therefore performed the following operation.

I first packed the vagina with gauze soaked in violet-green as though for a Wertheim's operation, and then, reopening the middle-line incision, crushed and divided the bowel below the colostomy and separated it down to the upper surface of the levators, following thus far the technique of my friend and generous teacher, Mr. Ernest Miles. The uterus being pulled upwards and forwards, I then, with a scapel, divided the whole length of the posterior vaginal wall by cutting on to the gauze packing. The gauze packing was then pulled out via the vagina by an assistant. I had previously tied a strong piece of sterilised string around the upper end of the detached segment of bowel and this was passed on a forceps through the incision into the vagina where it was seized by the assistant, who, pulling upon it, pulled the whole length of freed bowel out through the vulva.

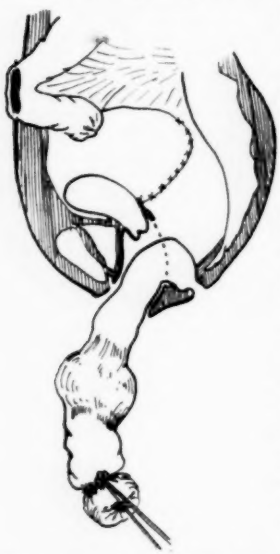


Diagram showing the bowel pulled through the incision in the posterior vaginal wall. The line of this incision is dotted. The position of the peritoneal roof is marked by crosses. The position of the growth in the bowel is indicated, as is the colostomy.

I then made a peritoneal floor exactly as though I was performing abdomino-perineal excision, except that it was far more easily and neatly done, as there was no mass of bowel to sew over, but, instead, a deep empty hole between the back of the vagina and the face of the sacrum. The abdominal wound was then closed (see diagram).

The patient was now placed in the lithotomy position with the freed bowel hanging out of the vagina, and I found there was length enough of bowel below the growth to enable me to crush and divide the bowel about two inches from the anus. I proceeded to do this and then inverted the ligatured end by a purse-string. Finally, the hole in the posterior vaginal wall was closed by a continuous catgut suture, a small gap being left at its lower end, through which a tube was passed into the empty space behind the vagina. The operation was relatively easy and rapid, and except for a little bleeding from the vaginal wall there was no hæmorrhage to speak of and no shock, and she recovered well.

I am not aware of this method having been described before, and my object in recording it is to suggest it as an alternative to the classical operation. The superior ease with which the gap left by the removal of the bowel from the hollow of the sacrum can be roofed over by peritoneum is very marked, especially by contrast with these cases of abdomino-perineal excision, where the detached bowel is hypertrophied and full of flatus. The avoidance of the perineal incision and the cutting of the levators, which is the stage where most of the shock and bleeding is incurred in the abdomino-perineal operation, is also a great gain, and where the growth is above the level of Douglas's pouch (and it is for such cases that the operation is specially suitable) the non-removal of the last inch or two of the bowel will not materially affect the patient's chances of cure.

If it be desired to remove this last two inches, the middle-line incision in the posterior vaginal wall could be carried down to the vaginal orifice and continued round the anus from that point, thus minimising the extent of the perineal wound and avoiding the excision of the coccyx.

# ANIMAL TUMOUR CELLS MADE RESISTANT TO X RAYS BY X RAYS.

BY S. RUSS, D.Sc., F.INST.P.

(*From the Cancer Research Laboratories, Middlesex Hospital.*)

PREVIOUS experiments [1] have shown that when animal tumour cells are given a dose of rays from radium just less than lethal they may remain in the body for some months without showing any sign of growth, but eventually they begin to grow steadily, although, as a rule, at a slower rate than the normal. The experiments described below show that if tumour cells are irradiated with almost a lethal dose, their descendants will not be so sensitive to the same dose if it is repeated some time afterwards, and eventually the tumour cells may become extraordinarily resistant to the rays.

### *Experimental Work.*

In the X ray treatment of cancer this fact is obviously of importance, and I am recording briefly a series of experiments which has so far lasted about a year. Previous experiments have shown that, in order to give a lethal dose of X rays under certain specified conditions of distance and output of radiation, the exposure takes about 56 minutes for the tumour used in these experiments—viz., Jensen's rat sarcoma. The chronological sequence of the experiment is given below. All the experiments in which radium was used were carried out in vivo, the X ray experiments were all done in vitro.

*Expt. 1.*—An inoculation of a normal rat sarcoma grew to size 4·5 × 4·0 cm. in seven weeks. A platinum tube containing 50 mg. of radium bromide was inserted into the middle of the tumour, fixed by sutures and left in position for 24 hours. Portions of tumour 2 cm. from the mid-point of tube were then removed and inoculated into ten rats. Eight tumours grew at very nearly the normal rate of growth.

*Expt. 2.*—One of these tumours (Expt. 1) grew to size 2·2 × 2 cm. in three weeks, and a 10 mg. tube of radium bromide was inserted into the tumour and left for three days. Portions of tumour 0·7 cm. from the mid-point of the tube were removed and inoculated into seven rats. One tumour grew at about one-twentieth of the normal rate of growth.

*Expt. 3.*—The tumour last mentioned grew to size 1 × 0·8 cm. in two months; it was transplanted into six normal rats. Five tumours grew at about one-third of the normal rate of growth.

[1] Dr. Helen Chambers and S. Russ: Proc. Roy. Soc., 1913, B, vol. lxxxvi.

*Expt. 4.*—One of these slowly growing tumours (Expt. 3), which grew to size 2·3 × 1·7 cm. in ten weeks, was excised and thin slices exposed to X rays for 45′ and 60′. The piece irradiated for 45′ was inoculated into 20 rats and 17 (i.e., 85 per cent.) tumours grew at about one-seventh of the normal rate. The piece irradiated for 60′ was inoculated into 24 rats and 15 tumours (i.e., 62 per cent.) grew at about one-twelfth of the normal rate.

*Expt. 5.*—One of the tumours in the 60′ batch (Expt. 4), which grew to size 1·2 × 1·1 cm. in five weeks, was excised and thin slices exposed to X rays for 90′ and 135′. The piece irradiated for 90′ was inoculated into 20 rats and ten tumours (i.e., 50 per cent.) grew at about one-sixteenth of the normal rate. The piece irradiated for 135′ was inoculated into 17 rats, no tumours formed, but in five animals small nodules persisted for about three weeks.

*Expt. 6.*—One of the tumours in the 90′ batch (Expt. 5), which grew to size 1·5 × 1·4 cm. in four weeks, was excised and thin slices exposed to X rays for 90′, 135′, and 180′. The piece irradiated for 90′ was inoculated into 19 rats and eight tumours (i.e., 42 per cent.) grew at about one-twentieth of the normal rate. The piece irradiated for 135′ was inoculated into 18 rats and two tumours (i.e., 11 per cent.) grew very slowly. The piece irradiated for 180′ was inoculated into 14 rats and three very small tumours grew which measured about 5 × 5 mm. at the end of one month.

*Expt. 7.*—One of the tumours in the 135′ batch (Expt. 6), which grew to size 1·3 × 1·1 cm. in five weeks, was excised and thin slices exposed to X rays for 140′ and 200′. The piece irradiated for 140′ was inoculated into 15 rats and two small nodules have persisted for six weeks. The piece irradiated for 200′ was inoculated into 15 rats and two small nodules have persisted for six weeks.

It will be seen that at Expt. 5 in the experimental series the tumour cells had developed an increased resistance to X rays, so that an exposure of 90 minutes was not enough to prevent a considerable proportion of tumours growing. In Expt. 6 tumour cells had grown when transplanted into rats, though they had had an exposure lasting 135 minutes. In other words, the lethal dose has been increased about two and a half times.

Ten years ago Nogier and Regaud [2] drew attention to the clinical fact that malignant growths, when exposed to X rays, suffered a gradual diminution in their sensitiveness to the rays. They advanced the argument that the various fluids of the body played some protective part in this process. Marie, Clunet, and Raulot-Lapointe [3] exposed a sarcoma of the mouse repeatedly to X rays and showed that cells took on certain new histological features, which continued for some time after the X ray exposures were stopped.

From the method of experiment which has been used in the series described here, it is evident that the acquired resistance must be attributed to some action of the X rays upon the cells of the tumour or its stroma. There is a distinction to be noted between the clinical conditions of Nogier and Regaud's observations and the experimental conditions here. In the former the tumour which received the first doses of X rays became resistant to the rays when applied later; no doubt many of the original tumour cells were present in this later stage. By the experimental method of transplanting a fragment of the tumour and waiting for a tumour of considerable size to grow before irradiating it, we are dealing, at each stage of the experiment, with cells many generations removed from those which have actually received the rays. In spite of this, the degree of acquired resistance is very considerable.

*Microscopic Examination.*

In order to see whether any histological changes were detectable in the tumour cells which had acquired this slowness of growth and increased resistance to X rays, they were examined microscopically. Sections of the normal rat sarcoma and of tumour which had grown after an exposure lasting 135′ (Expt. 6) were mounted on the same slide and kindly examined for me by Dr. E. B. Krumbhaar, who knew nothing about the identity of the specimens. He reported no appreciable differences between the two sections. When the irradiation period was extended to 180′, Expt. 6 shows that very small tumours persisted for some time, but did not continue to grow; one of these was excised and sections mounted on the same slide as those of the normal sarcoma. Dr. Krumbhaar's report reads as follows:—

"A section about 4 mm. in diameter (irradiated sarcoma): There is a general concentric arrangement of tumour tissue, which is well circumscribed and surrounded by fat and fibrous tissue. Within the nodule are many large bodies of various kinds; either giant cells (with a single eccentric nucleus) healthy or in various stages of degeneration or quite structureless bodies (apparently degenerated giant cells). Empty spaces apparently denote where these bodies have dropped out or in some places are dilated lymph spaces or fat. The body of the nodule consists chiefly of spindle cells and coarse collagen, somewhat separated by edema fluid. The spindle cells are mostly sarcomatous with relatively few fibroblasts. Blood-vessels are not numerous and not altered. There is no cellular infiltration.

Larger section (untreated sarcoma): The tumour tissue, which is found immediately beneath the epithelium, is circumscribed, but surrounded by much more delicate fibrous tissue. The section is much more cellular, the cells stain much more sharply, and there is less collagen. No giant cells are seen, though there is considerable variations in the size of the sarcoma cells. The predominant cell is a short, fat spindle, with a large oval nucleus and finely divided chromatin. Another section shows tumour cells closely packed, with a very little collagen distinguishable."

*Conclusion.*

It looks, therefore, as if we can recognise by this method of irradiation a number of steps in the action which X rays have upon these tumour cells, beginning after moderate doses with a slowing up of its normal rate of growth; with greater doses the tumour acquires an increased resistance to the X rays. When doses very near to the lethal dose are given, degenerative features appear in the cells which can be recognised microscopically. Experiments are in progress to see whether other animal tissues are similarly influenced by X rays.

The radium employed in these experiments has been lent to the Middlesex Hospital by the Medical Research Council.

[2] Compt. Rend. Acad. des Sci., June 8th, 1914.

[3] Bulletin de l'Assoc. Française pour l'étude du Cancer, tome iv. 4 année.

## THE METABOLISM OF COD-LIVER OIL BY DIABETICS.*

BY V. H. MOTTRAM, M.A.,
PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF LONDON.

*(From the Household and Social Science Department, King's College for Women.)*

THE problem of feeding diabetics, though undoubtedly alleviated by the discovery of insulin, is still difficult. To obtain for them a diet of even passable calorie value without the disadvantages of a glycosuria or an aceto-aceturia, is an undertaking. If we could find a fat which is metabolised along other routes than that of the keto-acids and does not, in avoiding that path, give rise to carbohydrate-like bodies, then it would be of immense value. The possibility of the unsaturated fats emerges. Leathes [1] has suggested that the undoubted manufacture of unsaturated fats by the animal body, probably in the liver, is a step in their metabolism to enable them to be more readily oxidised later. He compares it with the drying of gunpowder.

The easiest to obtain is, of course, cod-liver oil. This oil already has advantages over butter in having a higher calorie value, weight for weight, and a greater vitamin-A content. There is evidence that some di-basic organic acids [2] do not give rise to aceto-aceturia in diabetics, and also that some unsaturated fatty

* The expenses incurred in this work were defrayed by a grant from the Medical Research Council, to whom my best thanks are due.

[1] THE LANCET, 1909, i., 553.

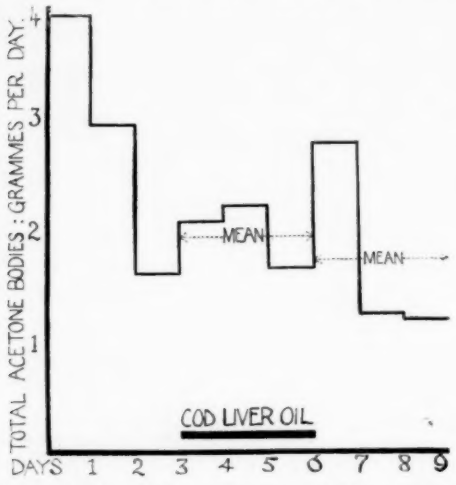
[2] Baer and Blum: Arch. f. Exper. Path. u. Phar., 1906, lv., 89; 1907, lvi., 92; 1911, lxv., 1.

acids [3] behave similarly. There is a possibility that the fatty acids of cod-liver oil would, on metabolism, yield di-basic organic acids. On the other hand, the first stage in the oxidation of the unsaturated acid appears to be the formation of the saturated fatty acid.[4] Consequently, in view of the value of fish oils and fatty fish in dietetics, experiments were put in train to discover the path of metabolism followed by unsaturated fatty compounds in the diabetic organism.

With the kind permission of Prof. F. R. Fraser, and the coöperation and advice of Dr. George Graham, I was allowed to substitute cod-liver oil for butter in the diet of diabetics in the Sandhurst Ward of St. Bartholomew's Hospital, when they were at the stage of receiving an egg and vegetable diet with 25 or 50 g. of butter. Either the acetone and the aceto-acetic acid were measured iodometrically, or the total acetone bodies were estimated by v. Slyke's method. The latter method was preferred, for the former, while often giving beautifully concordant results, would, in spite of all precautions, with urine which had been preserved for a while, give most anomalous results. Nothing short of a 1 per cent. agreement in parallel estimations has been accepted.

The result is briefly this, that when the butter of the diet—25 or 50 g. respectively—was replaced by 1 or 2 oz. of cod-liver oil in the form of a 50 per cent. emulsion, there is no evidence that the fat of the cod-liver oil is metabolised along other lines than those of butter. Unsaturated fats follow the same path as saturated fats. Consequently, the unsaturated fats in herring, sprats, salmon, or sardines, in the feeding of diabetics, must stand on their merits of high calorie value and vitamin-A content, rather than any antiketogenesis of their metabolism.

The accompanying curve perhaps best demonstrates this. The patient was on a diet of egg, vegetables, and




Excretion of acetone bodies on an egg, vegetable, and butter diet when the butter was temporarily replaced by cod-liver oil.

50 g. of butter per day, and making good progress. The total acetone bodies for three preliminary days were estimated, then for three days when the butter was replaced with a rather more than an equivalent amount of cod-liver oil, and finally, for three more days on the original diet. As will be seen, there was a slight rise on the first two days of cod-liver oil, followed by a fall to the original amount. The first day after the removal of it from the diet there is a rise, followed by a fall to a still lower point. Should anyone wish to argue from this curve that the removal of the cod-liver oil from the diet removes an anti-ketogenic substance from the diet, other curves could be adduced in which the opposite occurred. A more reasonable explanation is that the amount of ketosis in this patient was diminishing owing to his steady increase of power in metabolising carbohydrate, and that the ups and downs are variations due to chance. The mean excretion of acetone bodies during the cod-liver oil period was 1·93 g. per day, and in the succeeding three days 1·72 g. There is no evidence here or in other experiments that the metabolism of cod-liver oil pursued a different path from that of butter.

[3] Schwartz: Arch. f. klin. Med., 1903, lxxvi., 233.
[4] Dakin: Oxidations and Reductions in the Animal Body, 1922, p. 48.

# Clinical and Laboratory Notes.

## UNUSUAL VARIETIES OF CALABAR SWELLINGS,

### WITH A NOTE UPON THE ÆTIOLOGY OF THE CONDITION.

BY GEORGE C. LOW, M.D. EDIN., M.R.C.P. LOND.,
SENIOR PHYSICIAN, HOSPITAL FOR TROPICAL DISEASES; LECTURER, LONDON SCHOOL OF TROPICAL MEDICINE.

IN 1911, in a paper entitled Filaria Loa,[1] I described a rare form of Calabar swelling involving the hand and the whole of the forearm. Since that date, till the other day, I have not encountered such a case again, though Dr. P. Manson-Bahr tells me that he saw one a little time ago. Calabar swellings, as is well known, are connected in some way with *Filaria loa* infections and take the form of painless, non-inflammatory, white, waxy-looking, œdematous, solid swellings, usually about the size of a pigeon's or goose's egg. They last from two or three days to a week and gradually disappear of their own accord. They may occur on any part of the body. In the rare diffuse form to be described the swelling implicates the whole hand and forearm, the characteristic features of the localised swelling being present, however—viz., the peculiar white waxy-looking appearance, absence of redness, the solid nature of the œdema, not definitely pitting on pressure, painless—apart from the distension of the part—apparently causeless in origin and disappearing again of its own accord.

The following is the history of the case in question:

Patient born in England. Went abroad first in 1900 to Sierra Leone, South Africa 1904–1906, Nigeria 1911–1916, Cameroons 1914–1915, German East Africa 1916–1918, Northern Nigeria 1918–1923.

*Previous Illnesses.*—Malaria, dysentery (German East Africa).

*Present Illness.*—Swelling of right hand, slight, February, 1923. Again April, 1923, then clear till Dec. 16th, 1923, when right hand and whole of right forearm swelled up. Board-like swelling, no redness, no inflammation.

*Condition on Examination.*—I saw the condition on Dec. 28th, 1923. Very typical of the usual Calabar swellings—white, no redness, consistence pretty solid, difficult to pit on pressure. Extends up from hand, all of which is swollen, to elbow. No pain; just the discomfort of the tense feeling. Patient unable to move fingers properly.

On Dec. 31st I saw the patient again; swelling going down slowly. A slight papular condition present. Papules white, not red. No itching or special discomfort.

*Blood Count.*—Leucocytes 9000. Differential count: Polymorphonuclears 35, large mononuclears 4, lymphocytes 24, eosinophils 37 = 100.

On Jan. 7th, 1924, the swelling was slowly going down. On the 14th it was practically gone.

The photograph illustrates the condition. A point of interest is the time the condition lasted—viz., about a month. Small swellings are usually gone in a week or ten days.

Another rare form I wish to describe is that where the penis is attacked. I recently saw a good example of this in a patient who had already suffered from several Calabar swellings in different parts of his body. Long experience of such swellings enabled me to say at once what it was and to prognosticate that it would disappear in a few days of its own accord.

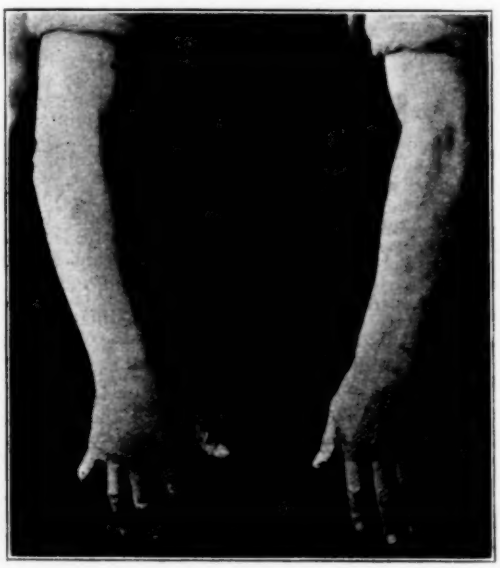
[1] Journal of Trop. Med. and Hyg., Jan. 2nd, 1911.

which it did. Another case showed the whole of the hand considerably swollen, especially in the dorsum, with no implication of the forearm.

*Ætiology of the Condition.*

In the *Journal of Helminthology* (1923, i., 191) I described the result of puncturing such a swelling, and looking for filarial embryos, on Sir Patrick Manson's assumption that the swelling might be due to a female worm giving birth to young ones. I definitely proved that this was not the case, and then threw out a suggestion that the cause might be due to the death of a worm with an escape of toxin or from some poisonous product of decomposition.

I have now collected some very strong presumptive evidence that such is the case. In the patient just



Calabar swelling implicating whole of right hand and forearm.

mentioned, who suffered from a Calabar swelling of the penis, I noticed as the swelling went down a small nodule which felt exactly like a coiled-up worm. I consulted at once with a surgeon upon the advisability of cutting down and removing this, but he was afraid of hæmorrhage from the corpus cavernosum, on the surface of which the mass apparently lay, while the patient—probably rightly so—refused absolutely to have any surgical interference. I had to content myself then with daily manual examinations. The little mass grew less and less and finally disappeared a considerable time after the general swelling had subsided. I believe then, that in this instance a worm had died; and in doing so had set free some toxic substance, which caused the œdema and so produced the Calabar swelling. Occurring as it did in the soft tissues of the penis, one was able to detect the little coiled-up mass, of what I took to be the worm, and which one would almost certainly have missed if it had been in the ordinary solid connective tissues. It is highly probable, then, that this is the explanation of the ætiology of the peculiar solid œdematous swellings known as Calabar swellings.

There is really nothing against the idea, nor does the fact that the patient may have many Calabar swellings militate against it, because we know from autopsies that infections with 20, 30 or more adult worms are not uncommon. *Filaria bancrofti* in dying, we know, often give rise to inflammation and even to septic troubles eventuating in abscess formation. *Filaria loa*, on the other hand, apparently give rise to localised œdematous swellings of an angio-neurotic nature.

## A NOTE ON VERTIGO.

By RICHARD LAKE, F.R.C.S. ENG.,
G. E. DUVEEN LECTURER IN OTOLOGY, LONDON UNIVERSITY.

IN cases of vertigo the examiner has such a wide field of origin to choose from that any factor which appears frequently in such cases becomes at least of academic interest; and after this factor has been submitted to scrutiny by competent authority its place is established according to its value. In a paper which I read before the Academy of Medicine in New York,[1] I made a list of causes of aural vertigo; the past decade has modified my views considerably, but I quote the grouping as I then presented it.

*Aural Vertigo.*

Section I.—Peripheral causes: (*a*) Chronic progressive middle-ear deafness; (*b*) hæmorrhage into labyrinth and embolism; (*c*) traumatism.

Section II.—Aural vertigo due to altered state of blood pressure: (*a*) increased blood pressure; and (*b*) diminished blood pressure.

Section III.—Aural vertigo due to general systemic causes: (*a*) leukæmia; (*b*) occasional; (*c*) with ocular symptoms; (*d*) specific; (*e*) cerebral anæmia.

This classification fails, especially when one is dealing with extra-aural cases, the more important of which were considered by Dr. Gordon Holmes in the discussion on Vertigo at the Royal Society of Medicine on Feb. 26th last.[2] The most important clinical feature of the majority of cases which I have seen in private and hospital practice, however, is that in Section II.(*b*), since 1912 I have made a point of ascertaining the blood pressure of these patients. The result certainly astonished me; a low blood pressure was so common. The frequency with which I found that something was apparently acting as a depressant upon the heart's action was also unexpected. I would go so far as to say that a, if not the, principal agent—i.e., in-patients with a normally low blood pressure and over 45 years of age—was tobacco.

The action of a low blood pressure upon the function of equilibrium is central and may be severe, embolic; transitory, or anæmic in its effect. In the severe form the vertigo is accompanied by deafness, which may be capable of improvement. In the less severe or transitory form I usually find that removal of the exciting cause and administration of remedies calculated to restore the blood pressure to normal is sufficient to prevent recurrence of the symptoms. A very interesting example of the effect of the blood pressure in producing vertigo is the following: A lady, aged 69, consulted me for vertigo, stating that she had been under a heart specialist for very high blood pressure, which he had reduced to 140. The vertiginous attacks were coincident with this reduction. Allowing the blood pressure to increase somewhat put an end to the attacks.

I have no record of high blood pressure as a cause of vertigo, although it is quite commonly present in cases of tinnitus in the middle-aged. Amongst other cases I have seen, syphilis has been fairly frequently present.

[1] THE LANCET, 1912, ii., 1638.
[2] THE LANCET, March 1st, p. 445.

LIVERPOOL NEW MATERNITY HOSPITAL.—Princess Mary Viscountess Lascelles visited Liverpool on March 12th to lay the foundation-stone of the new Maternity Hospital. The site for this hospital has been presented to the city by the late Sir William Hartley, together with a sum of £25,000, to which a further sum of £27,000 has been added by voluntary subscriptions. The site is conveniently placed near all the academic buildings of the city, and the erection of the new building is to be begun at once. The hospital aims at being a complete modern building to accommodate 90 patients, with facilities for increasing the number of wards as funds permit. Amongst those presented to Princess Mary, before the luncheon at the Town Hall given by the Lord Mayor and the City Councillors, were three members of the honorary medical staff, Dr. J. E. Gemmell, Dr. J. H. Willett, and Miss Frances Ivens. In the afternoon a visit was paid to the present maternity hospital on Brownlow Hill.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### POSSIBLE SUBSTITUTES FOR COCAINE.

A GENERAL meeting of the Society was held on March 12th under the presidency of Sir WILLIAM HALE-WHITE, when a debate was held on this subject.

Dr. H. H. DALE, in introducing the discussion, said it might seem strange that the question of replacing cocaine by artificial substitutes had not arisen in relation to other alkaloids which also were dangerous drugs of addiction, but in some respects the case of cocaine was unique. The effects of cocaine after absorption complicated its use in medicine and surgery by producing undesirable symptoms. Theoretically it was not impossible that a substance might be found having the valuable properties of cocaine without its harmful ones. He proceeded to consider the various substances which had been put forward as substitutes for cocaine, with the idea of discovering how far any or all of them together could fulfil its functions and avert its dangers. He enumerated the list of properties of cocaine.

1. It had a powerful and long persisting local anæsthetic action, with penetrative capacity in the tissues, so that it could produce anæsthesia of relatively deep structures.

2. When locally applied to a mucous membrane it caused constriction of the small blood-vessels, producing ischæmia and deturgescence. It also had a mydriatic action.

3. It showed but little tendency to irritate or devitalise the tissues in the area it was injected into.

Its undesirable properties were :—

4. It was somewhat unstable ; solutions of cocaine could not be sterilised by boiling without danger of hydrolysing it into benzoic acid and methylecognine, when its local anæsthetic action became destroyed.

5. It was dangerously toxic when absorbed into the general circulation, and this limited its use for producing anæsthesia by injection. And, unless only small quantities of dilute solutions were used, its application to intact mucous membranes was not without danger. There ensued a primary stimulation of the brain, with acceleration of cerebral processes, loss of sensation of fatigue, and a feeling of well-being and euphoria. Following this were restlessness and garrulity, accelerated respiration and heart-beat, a rise of arterial blood pressure, and a heightened temperature. A further stage was depression, collapse of blood pressure, slow and feeble heart-beat, loss of consciousness, and if death ensued it was from paralysis of the respiratory centre.

6. The primary stimulant effect of a dose which was not immediately dangerous was apt to leave a desire, in a person of weak control, for a repetition.

Of the substitutes which had been put forward to replace cocaine, he spoke only of those which had had some measure of success, omitting also such substances as orthoform and anæsthesin, which were suitable only as analgesic dusting powders. Of the eucaines, only β-eucaine had had practical success. He also dealt with tropacocaine, stovaine, alypine, novocaine, and butyn. In intensity and persistence of local anæsthetic action, cocaine seemed to stand unrivalled, excepting only butyn. Novocaine was much more rapidly destroyed in contact with the tissues, so that it did not penetrate deeply. Tropacocaine some regarded as equally active with cocaine in local application, but it was more evanescent. He hoped to hear more of the anæsthetic efficiency of butyn.

For none of the suggested substitutes was it claimed that they resembled cocaine in constricting the blood-vessels and producing shrinkage of mucous membrane. Had any of the available substitutes a like action, or could it be produced by locally mixing the anæsthetic with a suitable proportion of adrenalin ? And was the mydriatic action of cocaine considered important by ophthalmologists ? All the suggested substitutes seemed to be more stable than cocaine to boiling in watery solution, and most of them possessed less general toxicity than cocaine, though to this alypine seemed to be an exception. Eucaine, tropacocaine, stovaine, and novocaine were much less liable than cocaine to produce bad symptoms if absorbed into the general circulation. Butyn seemed to be even more toxic than cocaine judging by animal experiments ; yet in human therapeutics there had been an absence of bad symptoms from accidental absorption. The substitutes which had sufficient potency and penetration had the drawback of irritating and devitalising the tissues, while novocaine—ideal in this—was deficient in power and persistence. By choosing for each separate purpose the appropriate substance cocaine had been largely replaced by safer substitutes. For infiltration-anæsthesia and for nerve-blocking most needs were filled by novocaine. For causing analgesia by intrathecal injection, stovaine and tropacocaine had been largely used. When speaking of less dangerous substitutes he explained that he had in mind not only danger of immediate toxicity, but the more subtle danger of addiction. The problem created by the cocaine habit had led the Ministry of Health to appoint a special committee (of which he was a member) to discuss the question, and the terms of reference were, "To investigate the comparative value for therapeutic purposes for which cocaine is at present used, of various possible substitutes, and the evidence as to risk, if any, of such substitutes becoming drugs of addiction." He had failed to elicit evidence of a case of addiction to any local anæsthetic other than cocaine. Still, he would be interested to learn whether any of the substitutes had been found to produce a mental exaltation and euphoria comparable to that produced by cocaine, and providing the basis for its habit-forming property. A further important question was that of the extent to which the proper use of cocaine in medicine and surgery involved the danger of producing the drug-habit. This included the question of what was the proper use of cocaine. He thought cases in which the use of cocaine by the patient, on a prescription, for application had resulted in the formation of a vicious habit were rare. He expressed himself as very interested to know whether a single application of cocaine by the medical man himself had ever been known to result in the patient acquiring the habit. If not, the further question arose whether cocaine itself was indispensable for any other purposes, or whether those other uses could be met by one or other of the substitutes. Would medical practice in any direction be materially hampered if the use of cocaine were limited to direct application by the medical man himself, with prohibition of dispensing or prescription for the patient ?

In conclusion, he said that, under the title of the discussion, the only practical question was whether any of the possible substitutes, or all of them together, so far fulfilled the functions of cocaine that medicine and surgery could do without the latter. No negative answer to this question could at the present time be final. Synthesis of the drug had already resulted in a series of isomeric cocaines being produced. A wide synthetic field still remained to be explored, and there was always the possibility that from the research would emerge the ideal local anæsthetic, potent, penetrating, astringent, and free from immediate toxicity or habit-formation. If no efficient substitutes were yet available the question needing an answer was, could the use of cocaine in the profession be so restricted as to minimise its dangers without real detriment to practice ?

*A Resolution Withdrawn.*

The PRESIDENT mentioned that Dr. Dale had suggested that the meeting might like to pass a resolution on the matter, and if so, it would be wise to bring it before a fairly full meeting, as many might have left if it were deferred until later. The suggested wording was : "This meeting, while regarding the retention of cocaine as essential to medical and surgical practice, is of opinion that its use might with advantage be restricted to the application by the physician or surgeon himself, and the prescription or dispensing of it might be abandoned."

Prof. W. E. DIXON proposed this, in order to open the discussion.—Mr. H. J. BANKS-DAVIS seconded.

Mr. N. BISHOP HARMAN moved to add "except when prescribed in such vehicle, or with such other

drug, as to prevent its use for purposes other than that intended."—Mr. MARK HOVELL seconded this.

Mr. HARMAN, in support of his addition, said it was possible to prescribe cocaine in castor oil.—Mr. ERIC WATSON-WILLIAMS said he thought it was a startling thing that any action should be taken to limit the discretion of a physician or surgeon in prescribing anything he thought fit for use.—Dr. W. HILL deprecated passing anything like a panic resolution.—Dr. DALE interposed that it would be better to withdraw the resolution than to put it to the vote and have it rejected.

The proposal was then withdrawn by the PRESIDENT on the ground of due notice not having been given.

*Discussion.*

Prof. W. E. DIXON said it was remarkable that up to the present time no alkaloid had been produced synthetically superior to those provided by nature. But there was more hope with cocaine, because its action was essentially one on the central nervous system, the local anæsthetic effect being, in a sense, an accident. Montigazza spoke of the effect of chewing coca leaves as that of producing unspeakable beatitude. On two occasions the speaker had had 1½ gr. of cocaine injected into himself; and the only effects were some tremulousness and excitement, slight frontal headache, and wakefulness, and no desire to repeat the experiment. The effect did not differ materially from that following the injection of 4 or 5 gr. of caffein. Mariani, who popularised cocaine in Europe, gave some to Pope Leo XIII., and His Holiness presented the giver with a gold medal to show his gratitude for a medicine which so assisted him in the practice of his asceticism. A local anæsthetic was a general protoplasmic poison. β-eucaine, tropacocaine, and stovaine were now generally regarded as not satisfactory, because in the doses necessary to produce anæsthesia they also caused some irritation of other tissues. Eucopenal toxin was 20 or 30 times as powerful as cocaine, but it was useless in medicine because in very minute doses it not only destroyed the nerve fibres, but injured other tissues; it had not sufficient selective action. Local anæsthetics acted by paralysing sensory nerve-endings; and in the case of a mixed nerve they paralysed the sensory fibrils before the motor. Heroin had been introduced 15 years before a case of addiction was described, despite the fact that it was an ideal drug of addiction. The bowels of the morphine addict worked about once a week, but the heroin addict was almost normally regular in that respect. He thought that before the war cases of cocaine addiction must have been very rare. The habit started around the lines in France, thence it spread to Paris, to London, and, much later to Berlin. Men engaged in the war were in a highly emotional state when they came away from the conflict, and the mental exaltation caused by the drug seemed to bring to them the relief they craved. Yet they did not want to repeat it for a number of days. Since the war, however, cocaine snuffing had become more general. Dr. Copeland had been working a good deal at butyn; this exerted a stimulant action on a portion of the brain cortex, and its effect was temporary. After a time there followed a mild degree of depression. Butyn also temporarily paralysed, in relatively small doses, the nerve ganglion cells throughout the body. The cells in the autonomic system remained paralysed for from five to ten minutes. One objection which had been made to butyn was that it promoted free secretion; if absorbed there was great salivation, and when put into the eye the lacrymal gland secreted freely. Sometimes butyn did not act, and the reason, he thought, was that it was precipitated by even very weak solutions of common salt. Added to egg-albumen it caused a white precipitate. In the nose strong solutions of butyn paralysed the sympathetic nerve-endings.

Prof. C. S. GIBSON uttered a strong plea for more chemical research on this subject, on the lines so successfully carried out by Mr. Fourneau, in Paris, who synthesised stovaine, alypine, and some others. But this work, to yield its full benefit, must result from the collaboration of the chemist with the physician and the pharmacologist. He could not see what special advantage there could be in butyn over novocaine. Butyn compounds were capable of existing in optically active form, but the compounds which had been tried clinically had been only in the inactive form. The ideal cocaine substitute must be an optically active compound. Another part of the investigation was the stereo-chemical examination of these compounds. Dr. King had recently been investigating the stereo-chemical properties of β-eucaine and iso-β-eucaine, and Dr. J. H. Burn had arrived at the conclusion that the anæsthetic action of those compounds, whether optically active or not, was approximately equal. But he (Prof. Gibson) did not think that invalidated the necessity for a more complete stereo-chemical investigation of all the possible substitutes for cocaine. The most successful line of research, however, would be the synthesis of a compound on a cocaine model. Synthesis of cocaine had been achieved, and there was no difficulty about repeating it. The naturally occurring cocaine was levo-rotatory; the product synthesised in the laboratory was optically inactive. Yet no one had succeeded in resolving the synthetic cocaine so as to try and see whether dextro-cocaine might not be a desirable cocaine substitute. The most useful line of research would be to start from the cocaine model and build up as many compounds as possible, then to start a stereo-chemical investigation in addition, getting the pharmacologist to evaluate these drugs, which could then be handed over to the clinician.

Mr. T. B. LAYTON said the drugs under discussion were of interest to him solely in the light of surgical technique. Local anæsthetics were a means of replacing general anæsthesia by something more efficient, more safe, and more pleasant. He believed the future of rhinology was intimately wrapped up with the subject of local anæsthesia. Thus the need of a good and safe local anæsthetic was very great. In the matter of producing shrinkage he believed that when adrenalin was added to the local anæsthetic the latter was not quite so valuable as without it. He thought the clinician should tell the laboratory worker what he wanted, and that new drugs were really needed, though whether they would efficiently replace the present ones was matter for discussion. There were many gaps in the series investigated and when those gaps had been filled the ideal drug might emerge, one which had the advantages of cocaine without its disadvantages. It was the minor degrees of toxicity with which the clinician was concerned. When dealing with a patient and giving him drugs he found it almost impossible to say which symptoms were due to the drug and which to the anxiety and apprehensions of the patient who was about to endure an operation on the nose.

Mr. F. N. DOUBLEDAY, speaking as an odontologist, referred to the British Dental Association's questionnaire to the dental surgeons of the country, which showed that three-fourths of those who replied thought cocaine was essential for dental work, while the remaining one-fourth, comprising men connected with various dental hospitals, thought cocaine was not necessary, as efficient substitutes for the purpose had been found. He believed medical men had not yet appreciated how valuable dental operations could be as affording a clinical test of the relative value of the various substitutes for cocaine which had been suggested. He hoped Dr. Dale, in his reply, would say whether the manner in which the subgroups of atoms were brought into the molecules made any difference to the properties of the substance. He had recently tried various anæsthetics of the eucaine group, and he found many of them very irritating, though they did not cause much pain. If local anæsthetics came into contact with alkaline water, or lysol, many of them were precipitable, and their chemical character was thereby much altered. For dental purposes novocaine could be proved to be an efficient local anæsthetic.

Mr. S. F. ST. J. STEADMAN agreed that novocaine was an efficient anæsthetic. One drawback in the substitutes was the occurrence of after-pain. That could be minimised by using fresh solutions. Butyn, which he had used in 200 cases, did not produce anæsthesia quicker than did ordinary novocaine, and in some cases the after-pain of butyn was very severe, sometimes lasting as long as three or four hours. By the use of freshly distilled water the after-pain from a local anæsthetic was less than after nitrous oxide gas.

Mr. ERIC WATSON-WILLIAMS (Bristol) spoke of published cases of cocaine addiction before the war, and said that between 1888 and 1895 cocaine was used largely in the treatment of morphine addiction. Clinically, the real objection to cocaine was its toxicity, Figures of comparative toxicity had been published. based upon animal experimentation, but the limitation of the latter as a parallelism to human experience should always be remembered. Butyn, he considered, gave a perfect anæsthesia. All the substitute drugs were dangerous unless used with great care, hence the equipment of the clinician should be as simple as possible. The real objection to cocaine lay in the fact that it was poisonous, and in this respect the substitutes did not differ. There seemed to be a definite relationship between the toxicity and the anæsthetising power. Clearly, a local anæsthetic must be a substance with a special affinity for nervous tissue. If feasible, he thought experiments with these drugs on apes would yield the most dependable guide for man. He laid special emphasis on the question of the concentration of the drug in its relation to the toxicity. In cocaine, for example, in concentrations above 2 per cent., especially above 5 per cent., the toxicity was not very materially affected by variation in the concentration, but in larger dilutions the toxicity of the same gramme of cocaine fell rapidly. The importance of this lay in the fact that clinically only the dilute solutions were injected. By sufficient dilution a point was reached at which the drug was entirely non-toxic, and for cocaine this point was probably below the limit of clinical usefulness. In the case of novocaine, with adrenalin added, it was near ¼ per cent.—i.e., it was impossible to administer subcutaneously a dose of novocaine which would kill a guinea-pig. Perhaps it was along this line that a solution of the problem would be found.

Mr. FRANK COLEMAN said he knew of no anæsthetic which was so efficient as cocaine for the removal of tooth pulps. The public spoke of local anæsthesia as if only one drug was used to produce it, cocaine, and after an operation patients frequently expressed surprise at the absence of pleasurable sensation following the injection. He believed cocaine could be sterilised if boiled in a vessel which did not contain alkali.

*Reply.*

Dr. DALE, in reply, said it was shown some time ago that novocaine, in whatever concentration it was injected, seemed, by hypodermic injection, to be very much less toxic than cocaine, but if the injection were done directly into the blood-stream the contrast was much less striking. Novocaine was apparently either very rapidly eliminated through the kidneys, or was quickly hydrolysed into inert compounds when it got into the blood-stream. Butyn appeared to be a more stable substance. He spoke of a new local anæsthetic he was soon to have an opportunity of trying privately, in which he would seek the collaboration of some of his colleagues. He spoke hopefully of the prospects of a suitable substitute being eventually found.

## LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.

A MEETING of this Association was held on March 11th, Miss CHADBURN, the President, being in the chair, when papers were read on

*Anæsthesia and Anæsthetics.*

Dr. H. N. PAYNE, discussing general anæsthesia, said that she preferred ether to chloroform or chloroform mixtures, on grounds of easy administration and safety. Patients much preferred induction by gas, and this was the routine method used by her, followed by closed ether. For toothless patients in the Trendelenburg position, in the late stages of long operations, in abdominal cases where the patient was acutely ill, and in thyroid operation she preferred the open method. She gave chloroform only to patients who appeared unsuitable subjects for ether, on grounds of chest complications, age, or stoutness. It was not her practice to give scopolamine and morphine before an anæsthetic, and she gave atropine only in selected cases.

Mrs. A. GILLIAT, speaking on anæsthetics for ear, nose, and throat operations, explained how the technique had to be adapted to meet special difficulties caused by liability to an obstructed air-way. Anæsthetics for ear operations were less difficult than for those on nose and throat. The use of open ether was not altogether satisfactory, and she preferred induction with chloroform or C.E. mixture. She gave details of the technique employed in her practice for mastoid and lateral sinus operations, for operations on the nose, and for guillotine and dissection and enucleation operations on the tonsils in children and in adults.

Mrs. TINDAL-ROBERTSON discussed spinal anæsthesia. This method was useful in cases of operation at the level of the umbilicus or below, especially in asthmatic or bronchitic cases, or for those with certain heart diseases. For prostatectomic operations on stricture of the urethra and for amputations in cases of diabetic gangrene it was the method of choice. Cases of Wertheim's operation and excisions of rectum did better under spinal anæsthesia combined with twilight sleep or general anæsthesia. The injection of stovaine was liable to cause a fall of blood pressure which might be dangerous when the patient was badly shocked before the operation. Where the patient was not shocked to begin with, spinal anæsthesia diminished shock. In spinal anæsthesia given by modern methods it was considered essential that the patient should not be allowed to get frightened. A patient who had had injections of hyoscine, morphine, and atropine before being brought into the theatre was already drowsy or almost asleep, though she could be aroused, and if all unnecessary noise were excluded she remained asleep. If the operation were delayed or the patient difficult, very slight chloroform inhalations would be sufficient to put her to sleep. Mrs. Tindal-Robertson dealt with the technique of injections, and then with certain complications which might arise.

Dr. ENID MOORE described the technique of gas and oxygen anæsthesia, laying stress on the need for slow induction. For the alcoholic patient, introduction of ether vapour into the mixture was desirable. At the Infants Hospital, Vincent-square, gas and oxygen was used exclusively for abdominal operations, and the statistics appeared to show fewer fatalities than did other methods; especially in cases of congenital pyloric stenosis was it of value. Since an infant was liable suddenly to become deeply anæsthetised without preliminary warning, it was wise to give a proportion of 1 oxygen to 2 nitrous oxide instead of 1 to 4, as in adults. Occasionally the introduction of small quantities of ether vapour appeared to be stimulating. For adults, gas and oxygen was useful in stomach operations, thyroid operations, head operations, Cæsarean sections, in bronchitic patients and heart cases other than those with myocardial degeneration. Finally, Dr. Moore pointed out that vomiting might occur during operation when anæsthesia was too light or too deep and the narrow intermediate limits had to be observed.

Mrs. MARGARET BRADY, speaking of ethyl chloride anæsthesia, said that she used the Loosley apparatus for closed administration, which she demonstrated.

Administration was not difficult, and proved a useful half-way house between nitrous oxide and chloroform. The advantage for dental anæsthesia in children was that the child had to come up once only, instead of several times, for a multiple extraction. Caution was needed, since ethyl chloride was a quick anæsthetic. Change in respiration was, in the speaker's experience, far the most useful of the signs to watch. Another danger sign was change of colour, especially to a waxy pale colour. The drug had a cumulative effect, and it was not wise to push its administration till the pupil was fixed, central, and dilated. The lessening rigidity of the jaw muscles was a useful practical sign of increasing depth. The only fatalities known to Mrs. Brady were caused by administration of a second dose, at the request of the surgeon, during the same operation and she strongly advised that this should never be attempted.

Miss L. ALDRICH-BLAKE spoke of anæsthetics from the point of view of the surgeon and of the patient. From the patient's point of view, the two most important things were that an anæsthetic should be (1) safe, (2) as little unpleasant as possible. Nearly all patients disliked the smell of ether, and therefore induction by gas or some other method was an advantage, both to the patient and the surgeon. In the future, probably a combination of local anæsthesia and some less toxic form of general anæsthetic than was in routine use at present, would be the rule. She had found the injection of 2 per cent. novocaine into the muscles and planes of the abdominal wall, and into extra-peritoneal tissue in the rectum, very useful in diminishing shock. From the surgeon's standpoint, where good relaxation was required, to obtain and maintain the free airway was the first essential. Miss Aldrich-Blake quoted statistics from the records of consecutive patients operated on by her at the Elizabeth Garrett Anderson Hospital to show that no appreciable risk from pulmonary complications after ether anæsthesia need be feared. Of 700 patients, only 12 had developed pulmonary complications which might possibly be attributable to the anæsthetic, none of them being fatal.

Dr. MINA DOBBIE spoke of the use of twilight sleep in general practice. She said that the advisability of twilight sleep during labour was still a matter of controversy, that many of the arguments used against it were the same arguments that were formerly employed against the use of chloroform. The method of producing it, the dosage, and the purity of the drugs, varied so much when twilight sleep first came into use that the arguments used then were at least out of date. Most of the conditions mentioned by Dr. J. S. Fairbairn in 1917 as special indication for its use had been given by early observers as contra-indications. For women nervous of pain this was an ideal method and was safe so long as it was remembered that amnesia and not analgesia should be aimed at. Dr. Dobbie traced the history of twilight sleep, and gave details of the technique of the three schools; (1) the single dose school, (2) the standard dose school, and (3) the individual dose school.

Mrs. E. HANDLEY-READ, speaking of anæsthetics for dental surgery, discussed the patient's common preference for an anæsthetic which would enable several teeth to be pulled out at the same time when necessary. This, when insisted on, entailed a general anæsthetic other than gas and oxygen. The disadvantages were the difficulty of obtaining a suitable firm reclining couch even in a nursing home, where such an operation should be done; the danger that a portion of tooth or debris might pass down the throat, the shock following multiple extractions, and the danger of leaving too many open sockets in a septic mouth. For gas a skilled administrator was desirable, the inexperienced were apt to take off the face-piece too soon. She did not trust closed ethyl chloride for children, but it was useful as an open method to produce unconsciousness and followed by gas. Mrs. Handley-Read discussed the merits of local and regional anæsthesia, both of which methods were now being increasingly employed by dental surgeons.

## EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this Society on March 5th, Sir DAVID WALLACE, the President, in the chair, Mr. G. EWART MARTIN read a paper on the

*Application of the Bronchoscope in the Diagnosis and Treatment of Certain Affections of the Chest.*

He pointed out the apparent rarity of cases of foreign bodies in the bronchi in this country, as compared with other countries, and in particular America. The habit of American children of eating pea-nuts might in part explain this discrepancy, but he believed that the condition was more common than was generally supposed, and this was more recognised in America than here. In a visit to Dr. Chevalier Jackson's bronchoscopic clinic in Pennsylvania University he had seen six cases in which Chevalier Jackson had removed foreign bodies from the lower air passages, whilst in 15 years in the ear, nose and throat department of the Edinburgh Royal Infirmary a like number only of such cases was recorded. A résumé of these six cases was given. The diagnostic signs were largely clinical, and most commonly the signs were those of a localised bronchitis. Atelectasis might be present. Chevalier Jackson described an asthmatoid wheeze which he regarded as diagnostic, similar to the wheeze of asthma but drier, the pitch varying with the size, position, and shape of the foreign body. It ought to be possible to make at any rate a tentative diagnosis without the aid of X rays, and X rays themselves were not infallible, because the foreign body might be non-opaque. With regard to technique, distal lighting had been developed by Chevalier Jackson, and had rendered the procedure much easier. A general anæsthetic was never used. Mr. Martin then described the technique of the operation, and gave the indications for it.

Referring to bronchoscopic treatment of bronchiectatic abscess, Mr. Martin said that the operation was comparatively simple and the relief to the patient amazing. There was always some pus left in the cavity even after very successful postural coughing. This residual pus was first of all evacuated by means of the suction bronchoscope. The cavity was washed out with boric, then dried and painted with absolute alcohol. The alcohol apparently set up a slight irritation and enabled the walls to seal together. One aspiration and lavage was not sufficient, though Chevalier Jackson reported one case in which a single aspiration had effected a cure. He considered the case, however, to be one of idiopathic bronchiectasis. The disappearance of the fœtor which followed aspiration was a great boon to the patient, and the operation did not upset him in any way. For vaccine therapy a swab could be obtained direct from the affected area, uncontaminated by the various organisms usually found in the mouth.

Mr. Martin's discourse was illustrated by lantern slides, and was followed by a discussion in which the President compared bronchoscopy with cystoscopy, and pointed out how the incandescent electric light had made this so much more practicable. There also took part in the discussion Mr. J. S. FRASER, Dr. R. A. FLEMING, Mr. DOUGLAS GUTHRIE (who showed some slides), Mr. J. D. LITHGOW, Dr. C. W. SOMERVILLE, and Mr. J. H. GIBBS, and Mr. MARTIN replied.

Mr. JOHN FRASER read a paper on

*Problems of the Treatment of Empyema in Children.*

With reference to the incidence of the disease, Mr. Fraser said that in the Royal Hospital for Sick Children out of roughly 1000 surgical cases about 15 were cases of empyema. A more important fact was, however, that the vast majority of those cases were secondary to infection of the underlying lung, and he thought it of interest to attempt to answer the question—what proportion of acute lung infections ultimately develop empyema? He estimated that

out of 49 cases of acute broncho-pneumonia the percentage was 14, and of 336 of influenzal-pneumonia, 5·7, an estimate which corresponded with the figures of Mounetier. A possible explanation was that broncho-pneumonia affected the more debilitated child, and that empyema was but an indication of a general want of vitality. On the other hand, the wider distribution of the broncho-pneumonia offered a greater opportunity for spread to the surface. Another point of supreme importance in the progress and conduct of the case was the nature of the infecting organism. In 53 pneumococcal cases the mortality averaged 6·9 per cent., whilst in 17 streptococcal cases it was 24·7 per cent. In streptococcal cases adhesions were few and the effusion widespread, whereas in the pneumococcal cases adhesions were many and relatively stronger, so that the effusion tended to be limited. This point was of great importance in considering treatment, for stereotyped treatment was to be deprecated. Points to consider were (1) the general condition of the child, (2) the type of infecting organism, (3) were adhesions present to any extent between visceral and parietal pleuræ? (1) and (2) were easily decided. With regard to question (3) the type of infection gave an indication, but was not a certain guide, nor were X rays infallible. Valuable information could be obtained from the amount of intra-pleural tension. A large-bore aspirating needle connected with a water manometer was inserted into the pleural cavity. The pressure varied within wide limits according to the amount of fluid present, but on the average it registered about 100 mm. of water. The important finding, however, was the degree of oscillation. In the absence of adhesions the play was wide, whilst the movement-limiting effect of their presence resulted in the maintenance of a constant pressure with comparatively little variation.

Mr. Fraser went on to discuss the practical details of treatment. In a case where adhesions had been demonstrated the aim was to open freely into the abscess cavity, to evacuate the pus, and also masses of fibrin adherent to the pleura, to establish a *closed* drainage from the most dependent part of the cavity, and to close completely the original wound after disinfecting its edges. Details of the technique were given. Dr. Fraser found that the results were most encouraging. After a period varying from 20 to 28 days the post-operative pneumothorax had disappeared, and the lung expanded to fill the cavity of the chest. In streptococcal cases free incision, owing to the absence of adhesions, led to extensive collapse of the lung, often with fatal result. Aspiration was, therefore, practised for four or five days to permit of the formation of adhesions, after which a procedure similar to the above might be applied with a considerable margin of safety. Every care must be taken to avoid breaking down the adhesions. Mr. Fraser considered this method superior to any other yet evolved.

Various points in the technique were illustrated by lantern slides.

The subsequent discussion was opened by the PRESIDENT.—Mr. D. P. D. WILKIE referred to the work of the commission on post-influenzal empyema in American camps, from which it was concluded that the best results were obtained from aspiration. He also spoke of the method of aspiration followed by injection of an amount of 1/2500 gentian violet equal to half the aspirated fluid.—Mr. W. J. STUART spoke of a method of suction drainage by means of a Politzer bag, which he had employed in adults with success.—Dr. S. DAVIDSON spoke of the importance of knowing the type of pneumococcus, and suggested the value of serum injection after aspiration.—Mr. J. W. DOWDEN, Dr. FERGUS HEWAT, and Mr. JOHN STRUTHERS also spoke, and Mr. FRASER replied.

*Exhibition of Cases.*

Sir NORMAN WALKER showed a case of leprosy. The patient was an old woman who had been in Russia 30 years before, but had had no communication with Russians even by post since then. She had apparently been perfectly well up till three years ago. Treatmen by a vaccine prepared from one of the nodules by Colonel W. Glen Liston was instigated with rather remarkable result, as shown by comparison of the present condition with a cast of the arm made before the commencement of treatment. Films made from the nodules before and after showed a remarkable diminution of bacilli since treatment. Some 20 injections had been given.

Mr. GEORGE CHIENE showed a case of snapping hip in a girl of 15 successfully treated by operation, and Dr. JOHN EASON showed a case of congenital heart disease in a woman aged 24.

## LIVERPOOL MEDICAL INSTITUTION.

A MEETING was held on March 6th, with Mr. G. P. NEWBOLT,[1] the President, in the chair, when Mr. HUGH REID read a note on an

*Obscure Case due to Calculus*

in the pelvis of an ectopic kidney situated below the brim of the bony pelvis. The case was seen by Mr. Reid while the patient was under the care of Mr. Thelwall Thomas in the Royal Infirmary. The patient, a man, had a history of cutting pain in the left lumbo-sacral region shooting towards the groin. He also had pain in the suprapubic region passing down the penis. Blood had been passed in the urine. The clinical findings were negative. Urine examination showed urea 1·97 per cent., a few blood and pus cells, and staphylococci. The X ray diagnosis was "stone in the bladder." At a cystoscope examination pus was seen coming from the left ureter and from this it was decided that the condition was due to a stone in a much dilated ureter, low down. An operation was performed by Mr. Thomas. A split-muscle incision over the left iliac fossa was made, the ureter was not found, and the kidney was then noticed to be placed entirely below the brim of the bony pelvis; the organ could not be brought out if its bed through the wound and the renal vessels were seen arising from the common iliac. The stone was felt in the pelvis of the kidney and removed. One month after the first X ray examination the patient was discharged with the wound healed after a normal convalescence. Mr. Reid exhibited a lantern slide of the X ray plate and gave a short review of the literature on the subject, together with an account of the embryology, clinical features, pathological changes, diagnosis, and treatment of ectopic kidneys.

Dr. MORRIS J. COHEN, who assisted at the operation, said that the presence of pelvic kidney was unsuspected. The right kidney was shown on the X ray plates in its normal position. The shadow of the pelvic bones would naturally obscure the outline of the left kidney. No pyelogram had been made. Recently he had seen a post-mortem of a female case in which the left kidney was fixed below the brim of the pelvis. In both instances the suprarenal bodies did not descend with the kidneys.

Dr. J. C. MATTHEWS read a note on two cases of

*Hodgkin's Disease*

showing the periodic pyrexia usually known as the Pel-Ebstein syndrome. In one of them the diagnosis of Hodgkin's disease had been confirmed by post-mortem examination. A condensed temperature chart, prepared on the lines suggested by Hall and Douglas, was shown. This showed a wave-length of about 21 days. The second case was observed over a much shorter period and showed a wave-length of about 14 days.

Dr. S. W. PATTERSON read a paper on 31 cases of the same disease. Having outlined the clinical features and pathological appearances of the blood-forming organs, he discussed the absence of any

[1] We recorded last week with regret the sudden death of Mr. Newbolt; an obituary notice appears on p. 626 of the present issue.—ED. L.

significant ætiological factor. Syphilis and tubercle were related to Hodgkin's disease only as secondary accidental infections. Three cases had been attending the skin department for chronic skin lesions, in one instance for six years, before severe symptoms of Hodgkin's disease appeared. The pathological changes in the liver and spleen had led by analogy with malignant disease to Hodgkin's having been regarded wrongly as a new growth affecting the blood-forming organs. Having regard, however, to the peculiar disturbances of temperature with remittances and big oscillations, the more or less progressive course ending in death, and the pathological appearances, the causative agent was likely to be parasitic.

MR. J. T. MORRISON spoke of the uncertainty that prevailed as to the nature of the disease and even as to whether it was one disease or a group which was called lymphadenoma. In view of this he emphasised the importance of concentrating on what was known and of making the diagnosis as accurate as possible. He declared that no patient with an operable mass of glands in the neck should be condemned to the label lymphadenoma until a gland had been submitted to microscopic examination. In excluding tubercle this was most important. In regard to treatment, he declared that results of excision in early cases followed up by full courses of X ray treatment and arsenic were better than from any of these methods taken individually, and he pleaded for further trial of this plan.

# Reviews and Notices of Books.

OPERATIVE SURGERY.

Covering the Operative Technique involved in the Operations of General and Special Surgery. By WARREN STONE BICKHAM, M.D., F.A.C.S., former Surgeon in Charge of General Surgery, Manhattan State Hospital; Instructor in Operative Surgery, College of Physicians and Surgeons (Columbia University). In six octavo volumes. London and Philadelphia: W. B. Saunders Company, Ltd. 1924. Vols. I. and II. Pp. 1726. 50*s.* net per vol.

THIS treatise on operative surgery, comprising in all nearly 6000 pages and 6300 illustrations, is most unusual in that it is the work of a single individual. Nowadays we are accustomed to systems of surgery and medicine, the results of the collaboration of a number of writers welded into a whole by a single editor. Here we have an immense work written throughout by a single author, free from overlapping, unevenness, and other short-comings of a collective system, and with uniformity of outlook and expression. The author can only have achieved this success by colossal industry and a tenacity which must surely have been strained almost to breaking point, when subjects in which he was not particularly interested had to be dealt with. The two volumes under review show no evidence of flagging in interest or effort. In the preface the author reveals the motives which led to the writing of such a book. It is intended to deal with operative technique alone, but the author does not over-rate the place of technique in surgery. He maintains that operations should be carried out with a consummate regard to technical detail, which should be unobtrusive to the onlooker. His object has not been to describe all the operations of surgery, but the work is almost encyclopædic; we find, for instance, four methods of performing the rarely undertaken operation of ligature of the innominate artery.

Vol. I. deals with general surgical technique, including anæsthesia, local and general, plastic surgery, amputations, and the excisions of bones and joints. Each operation has a systematic heading, consisting of (1) a description of the operative technique in a few words; (2) an anatomical designation of the structures involved; (3) the name of the surgeon or surgeons to whom credit is given for the invention or modification of the procedure. Each section begins with a general consideration of the region in question, including its surgical anatomy, while it is concluded by a paragraph labelled "comments." In this volume there are satisfactory accounts of the various amputations and excisions, whilst some subjects to which much space is not usually allotted are fully considered. Amongst these is the question of the selection of the amputation site in relation to modern protheses, a full description of artificial limbs and what can be expected from them, kineplastic operations, and paraffin injections. The section on plastic surgery is very good, but, curiously, there is no mention of the method of the epithelial inlay graft, developed so extensively by Mr. Gillies.

In Vol. II. are found operations upon the blood-vessels, lymphatics, and nerves, operations upon bones, muscles, fasciæ, tendons, bursæ, cartilage, and joints (excluding excisions), together with two large sections upon the brain and spinal cord. This volume contains a mass of information, an immense number of operations being described, some of which are but little practised, such as Jonnesco's excision of the cervico-sympathetic, and Cushing's ventriculo-abdominal drainage for hydrocephalus. It is almost hypercritical to note an omission, but in the section on the closure of persistent bone cavities, amongst the ten methods discussed, no mention is made of the use of a pedicled muscle flap, which is very satisfactory on occasions. The sections on brain and cord surgery are unusually good.

The author set himself the purpose of describing technique only. One could wish that he could have amplified this by more discussion of the relative merits of the procedures he describes. Where he departs from this self-imposed restriction, unfortunately too seldom, his remarks are always valuable. For example, the lymphangioplasty of Handley and Kondoleon's operation appear in succession as apparently equal competitors for the surgeon's serious attention; the turning down of a section of nerve to bridge a gap and the implantation of a graft rank equally with direct union after slow stretching or the transplantation of the nerve trunk so that it follows a shorter course.

The author might have been more eclectic, even while professing only to deal with technique. But it was a great conception to write without assistance a large work dealing with all branches of surgical technique; in execution it has reached a pitch of extraordinary success.

*The Students' Handbook of Surgical Operations.* By the late Sir FREDERICK TREVES, F.R.C.S., and JONATHAN HUTCHINSON, F.R.C.S., Consulting Surgeon to the London Hospital. London: Cassell and Co., Ltd. 1924. Pp. 552. 10*s.* 6*d.*

THIS fourth edition of a well-known manual has been revised and enlarged by Mr. Hutchinson. The task has been thoroughly carried out, as can be readily seen by references to such sections as those on the stomach and skull. The author justifies the devotion of so much space to amputations and the tying of arteries on the grounds that these subjects bulk largely at examinations, as they provide excellent and almost the only available tests of the candidate's skill and anatomical knowledge. There is a very great deal to be said for the view whilst examinations are a necessity, and these sections do not seem to be over-emphasised in the present volume; more drastic revision of them would have detracted from the value of the work. The book is so well established that a detailed criticism is not required. It is likely to remain one of the best students' manuals on operative surgery.

ASSYRIAN MEDICAL TEXTS.

From the Originals in the British Museum. By R. CAMPBELL THOMPSON, M.A., F.S.A. London: Humphrey Milford, Oxford University Press. 1923. Pp. 107. 42*s.*

THIS compilation presents in 107 large plates the carefully drawn facsimiles of the text of 660 cuneiform medical tablets, for the most part hitherto unpublished,

from the royal library of Ashurbanipal, now preserved in the British Museum. This library is almost the sole source of our knowledge of Babylonian and Assyrian medicine, and it was discovered in 1849 by Sir Austin Henry Layard in the course of his excavations at the Mount of Kouyunjik, opposite Mosul, the site of Nineveh, capital of the later Assyrian empire. The tablets, dating back to the seventh century B.C., are, as Mr. Thompson states in his preface, copies of older texts, as is obvious from the similarity of the medical tablets found at Askur, which are centuries older. The reproduced tablets, some of which are mere fragments, are arranged and indexed. No translations are included, but many of the texts are interpreted and systematised by Mr. Thompson in a paper, published in the Proceedings of the Royal Society of Medicine, 1924, Vol. XVII. (Section of the History of Medicine), pp. 1–34, of which reprints[1] are available. It is a little over ten years since the late Prof. Morris Jastrow of Pennsylvania lectured to the Royal Society of Medicine on the medicine of the Babylonians and the Assyrians, and his address[2] is still worth reading.

---

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF GLYCOSURIA AND DIABETES.

Second edition. By HUGH MACLEAN, M.D., D.Sc., M.R.C.P., Professor of Medicine, University of London, and Director of the Medical Clinic, St. Thomas's Hospital. London: Constable and Co. 1924. Pp. 191. 12*s*.

THE fact that the first edition of this book was exhausted within a few months certainly justifies the view that it has been of service to the general practitioner. Opportunity has now been taken to add a special chapter on the properties and use of insulin. The discovery of insulin by Banting is described, and a short account is given of its preparation and standardisation. The effect of the drug on normal and diseased persons is discussed, together with the symptoms and treatment of hypoglycæmia. The type of patient with diabetes mellitus who needs insulin is described, and the necessity of making certain of the diagnosis before starting treatment is insisted on. Prof. MacLean is pessimistic as to the ultimate benefit which insulin will confer on patients, since with the old dietetic treatment patients who had done well at first relapsed afterwards. He expresses the opinion that insulin will do no more to cure diabetes than does thyroid extract to cure myxœdema. But no one outside certain irresponsible writers in the press has ever hoped that a real cure would be obtained, however great the improvement might be both in the clinical condition and in the recovery of sugar tolerance.

The general directions for the giving of insulin to patients are clearly set out, and certainly with their help there should be no symptoms of overdosage, even if no blood-sugar determinations are carried out. The importance of blood-sugar determinations is, however, pointed out. The observation that mild infections play an important part in lowering the sugar tolerance is well known, and must not be overlooked. The directions given for the treatment of coma are simple and good. The rest of the book has been little altered. In our review of the first edition we pointed out that references to some of the literature on the subject would add greatly to the value of the book. In the new chapter on insulin no reference is given to any recent work or papers; and although Prof. MacLean in several places notes his disagreement with certain opinions which have been expressed, he omits to give either the name of the authors or the references to their papers.

The book will continue to be much read and appreciated by the practitioner, for it describes the physiology and pathology of diabetes in simple language and gives a good account of insulin therapy.

[1] John Bale, Sons and Danielsson, Ltd., London. 2*s*. 6*d*.
[2] THE LANCET, 1913, ii., 1136.

X RAYS AND CRYSTAL STRUCTURE.

Fourth edition, revised and enlarged. By Sir W. H. BRAGG, K.B.E., M.A., D.Sc., F.R.S., Director of the Royal Institution of Great Britain and of the Davy Faraday Laboratory, Honorary Fellow of Trinity College, Cambridge; and W. L. BRAGG, F.R.S., Langworthy Professor of Physics in the University of Manchester. London: G. Bell and Sons, Ltd. 1924. Pp. 322. 21*s*.

THE authors have found it necessary to rewrite a great part of their original book on this subject. Since the discovery by Laue in 1912, that the regularity of structure of crystals could do for X rays what a diffraction grating does for light, a new branch of physics has developed. This allows us not only to determine the wave-lengths of beams of X rays, but, by means of the knowledge which has been gained on X ray wave-lengths, the view is encouraged that many of the details of crystal structure will be revealed by an analysis of the X ray spectra which the crystals produce. The authors have contributed largely to the advances in this subject and the X ray spectroscope of their design is now found in many laboratories. The general arrangement of the book is unaltered, but the subject-matter has grown apace; perhaps the most interesting development is the experimental attempt to reveal the structure of organic crystals by means of X ray analysis; among the organic substances so far investigated on these lines may be mentioned naphthalene, anthracene, benzoic acid, resorcinol, urea, and tartaric acid. The book finishes with an appendix of 15 pages, giving a list of all the crystal substances which have been submitted to X ray analysis.

It is attractively written and well illustrated with photographs of original line drawings, which help the reader considerably in visualising crystal structure.

---

ENDOCRINOLOGY.

*The Endocrine Organs.* An Introduction to the Study of Internal Secretion. Part I.: The Thyroid, Parathyroids, and the Suprarenal Capsules. Second edition. By Sir E. SHARPEY SCHAFER, M.D., F.R.S., Professor of Physiology in Edinburgh University. London: Longmans Green and Co. 1924. Pp. 175. 15*s*.

THE first edition of this book has been out of print now for about four years, and we extend a very hearty welcome to this the second edition. It is to appear in two volumes, of which this is the first. There is no doubt that it is one of the best books on the subject in the English or in any language. Certainly in no other work is the vast literature treated with such a masterly skill; the best of the literature has been collected and given in footnote references, and the labour this has involved must have been immense. Moreover, the literature has been brought well up to date. Sir Edward Sharpey Schafer has rendered to physiology and to medical science in general a very great service in putting the salient facts of this important branch of knowledge within easy reach of anyone who really wants to know what are the ascertained facts on internal secretion. While the matter has been considerably extended and many additions made to the illustrations, the general technical excellence of the publication is well up to that of the first edition.

---

*An Introduction to the Study of Secretion.* By SWALE VINCENT, M.D., F.R.S. Edin., Professor of Physiology, University of London (Middlesex Hospital Medical School). London: Edward Arnold and Co. 1924. Pp. 168. 10*s*. 6*d*.

THIS volume represents in slightly expanded form the matter of eight university lectures given at the Middlesex Hospital during last winter. It might well have received the sub-title "Essays of a Sceptical Physiologist," for its author clearly shows that scepticism is much preferable to improperly founded

hypothesis. One of the main objects of the book was "to examine the main facts of secretion and 'internal secretion' to see how far they may legitimately be included in a common category." The results, so far as they are sufficiently definite in the present state of our knowledge, indicate that the two functions are essentially different. We agree with the author's conclusions, and would be glad to see the book widely read, not only by physiologists but also by senior students and by those interested in organotherapy. On the last-named subject the author is very sceptical, the position of course being reached that while he prefers fact to hypothesis, he has to decide what and where a hypothesis is tenable. Individual opinion cannot here be final.

*Lectures on Endocrinology.* By WALTER TIMME, M.D., Attending Neurologist, Neurological Institute, New York; Professor of Endocrinology, Broad Street Hospital, New York: Paul B. Hoeber, Inc. 1924. Pp. 123. $1.50. (A Reprint of an article which appeared in the *Neurological Bulletin*, January, 1921.)

THIS is a little book which takes conclusions regarding endocrinology as far as is really safe in the present condition of knowledge. Many interesting cases are described and illustrated with photographs. On the purely scientific side there is less to be said in favour of the book, for, as in many works on this subject, unjustifiable arguments are used to fill the gaps in our knowledge. But as the work is intended mainly for clinical readers there can be little objection to it on those grounds.

MARRIAGE AND SYPHILIS.

By G. M. KATSAINOS. Boston: Wright and Potter. 1923. Pp. 162.

THE campaign for the eradication of venereal disease was won the day that "syphilis" appeared in the headlines of a respectable newspaper, but the victory needs to be pushed home in every possible way. Dr. Katsainos proceeds along the blood-curdling line, and by his descriptions and pictures of the most extreme results of congenital syphilis will impress some, but he will offend the moderate by his exaggeration, medical men by his accusations of indifference and carelessness, women by his frank conclusion that they are unfit for the medical profession because they do not understand syphilis. They will perhaps forgive him for his real sincerity in the best of causes.

PAPERS ON PSYCHO-ANALYSIS.

Third edition. By ERNEST JONES, M.D., M.R.C.P. Lond., President of the International Psycho-Analytical Association and of the British Psycho-Analytical Society. London: Baillière, Tindall and Cox. 1923. Pp. 731. 25*s*.

THESE are chiefly papers read before various societies, and, though not arranged in chronological order, indicate the growth of the complexity of the subject. The order gives an impression of unevenness; the fourth chapter plunges the reader into an account of recent advances in psycho-analysis for which he is scarcely prepared, and the chapter answering criticisms of psycho-analysis would be better placed early in the book. Five chapters are new and replace an equal number now omitted. That on the nature of auto-suggestion has been called forth by the need for examining this current explanation of mental phenomena, and the author, like everyone who attempts a serious examination of suggestion, finds definition difficult. One gathers that he recognises both auto- and hetero-suggestion: the former depends upon a primary narcissism, aided by the primitive belief in the omnipotence of thought, whilst if the ego-ideal is resolved into the earlier father-ideal—that is, if the subject reverts to an infantile attitude towards the suggestor—the process may be termed hetero-suggestion. He regards it as impossible to combine suggestion with psycho-analysis. Of the older chapters one, dated 1909, describes a case of wandering associated with loss of memory, and it is to be noted that, although such cases seem to be frequent, the fact that the patients are amenable to treatment directed to the restoration of the lost memories is not yet part of our common knowledge.

The new-comer to the subject will find some papers easy and others almost beyond his grasp, but the appearance of a third edition shows that the book is able to compete successfully with less authoritative works which would present us with a "psycho-analysis without tears."

MIND AS A FORCE.

By CHARLES F. HARFORD, M.A., M.D. London: George Allen and Unwin. 1923. Pp. 128. 3*s*. 6*d*.

DR. HARFORD makes no pretence to represent any but his own views, though his chief theme is the method of treatment associated with the name of Mr. Coué. He is somewhat naive in making apparently simple postulates which lead to sad complications. Mind is a force, he says on page 17, and a few pages later we read of a new memory being added to the "store chambers of the mind." This puzzle, like the identification of conscience with the Freudian "censor," should set psychologists thinking. The claim that micro-organisms, chemical poisons, and the like must operate through some influence of the mind is likewise stimulating. His explanation of the "law of reversed effort," however, emphasises a phenomenon often overlooked by those who regard the neurotic sufferer as a person who only needs to exercise "will" in order to get well. He has expressed a clinical fact, too often ignored, in the following words: "To attempt to counteract the evil tendency of the strong emotional force in the memory by a counter-charge of emotional force exercised by the will leads to a deadlock or reverse." The author is evidently a religious man with a charming tolerance and a persuasive manner of writing. One pictures him as easily attaining a personal influence over his patients which, in spite of his own theories, is probably more effective than any auto-suggestion. The book is, as indicated above, not a sound guide to theory, but it carries a suggestion of restfulness often lacking in psychological literature, and, whether written for the purpose or not, could be safely, and perhaps with benefit, placed in the hands of many neurotic patients.

## JOURNALS.

QUARTERLY JOURNAL OF MICROSCOPICAL SCIENCE. Edited by Prof. GOODRICH, F.R.S., and others. Vol. LXVII., Parts 3 and 4. Oxford University Press.—These two parts deal with a variety of zoological topics representing nearly the whole range of the practical aspects of the science. There are 11 separate memoirs, all of interest. Dr. Woodland has continued former studies upon the structure of the monozoan cestodes, a group probably serving to connect the older cestodes with the corresponding group of trematodes, which latter is entirely "monozoan" and never forms indefinitely multiplying chains lying in contact like the familiar forms of cestodes. Another paper, dealing also with the general anatomy of a species, is that by Dr. Agersborg, of Williams College, Massachusetts, upon the Nudibranch *Melibe leonina*. It is a comprehensive memoir illustrated by 11 double plates and containing a full bibliography. Among the lower forms of life the fairly well known infusorian, originally described by Ehrenberg, and named *Spirostomum ambiguum*, is dealt with by Miss Bishop, who has specially studied the meganucleus and micronuclei which are abundantly figured in two plates. Other protozoa form the subject of papers by Prof. Bronte Gatenby and Miss King (The Golgi Bodies of a Coccidian), while Mr. J. S. Huxley and Mr. de Beer write upon "Dedifferentiation" in Campanularia and Obelia by resorption of the hydranths wholly or mainly into the stem.

# The Conduct of Medical Practice.

*A Series of Articles by Experts dealing with the Difficulties Encountered in Professional Life and How to Meet Them.*

## XII.—PUBLIC HEALTH APPOINTMENTS.

By G. S. ELLISTON, *M.C.*, M.A.,
BARRISTER-AT-LAW; EXECUTIVE SECRETARY, SOCIETY OF MEDICAL OFFICERS OF HEALTH.[1]

"I am as poor as Job, my Lord, but not so patient."—*Henry IV.*, Pt. II., Act 1.

A CERTAIN liveliness which has been noticeable in connexion with public health appointments during the last five years is perhaps not wholly understood by private practitioners or by young graduates who are considering the pursuit of preventive medicine as a career. It may be useful, therefore, if we consider here the conditions at present obtaining in the public health service and the policy of the British Medical Association and the Society of Medical Officers of Health in regard thereto.

### *Evolution of the Public Health Service.*

For some reason which is difficult to explain the remuneration of public health appointments has never yet borne any reasonable relation to the earnings of practitioners in other branches of medicine. In spite of this fact many good men were attracted to a service which offers unique opportunities of advancing the well-being of the community. The work accomplished by these pioneers during the last half-century met with scant recognition, although the results they achieved brought about a spectacular reduction in morbidity and mortality. Of recent years there has been legislation involving a remarkable extension in the provision of public health medical services, and the men who had been mainly concerned with environmental hygiene, found themselves responsible for the medical supervision of school-children, the welfare of mothers and infants, the organisation of clinics for the treatment of defects and minor ailments, and the administration of schemes for the control and treatment of tuberculosis and venereal diseases. It was when they realised how closely the public health department must be brought into contact with the private practitioner that medical officers of health became uneasy about the staffing of the service. While they had been content to accept almost contemptuous salaries themselves, it dawned upon them that for the extended activities of their departments they must have assistant colleagues of good standing who would command the confidence of the public and the respect of the private practitioner. It meant, in fact, that in order to attract and retain such assistants, the service must offer salaries comparable with the rewards of other branches of practice. Thus it happened that a campaign for fair salaries in the public health service has been initiated and carried through mainly by senior medical officers of health who can expect no personal gain from the result of their efforts.

### *Staffing of Health Departments.*

The majority of the medical officers[2] who have chosen the public health service as a career are real enthusiasts, and if they magnify their office it is because they fervently believe that the future belongs to preventive medicine. But they know well enough that the influence of the health department cannot reach its maximum until every private practitioner is coöperating for the prevention of disease. Hence their anxiety to attract promising young graduates to the public health service, men with qualifications and experience that will secure the confidence of their colleagues in private practice. They would like it to be recognised by the medical schools that the extension of preventive medicine calls for the best brains of the profession, more especially as the health officials in their relation to local authorities can do much to instruct lay opinion on medical matters. It is not enough, however, to offer a young doctor work of extraordinary interest and influence; if he is to accept the limitations of an official post he is surely entitled to an adequate salary with reasonable prospects of advancement. Otherwise the public health service must be staffed by men with private means, by men with no ambition, or by men who have failed in other branches of practice.

Before the great extension of health services there were so few assistant medical officers of health that all of them might expect to secure promotion to a principal post in the course of time. To-day things are very different, for in the counties and big cities, in addition to deputy or assistant medical officers of health for general administrative purposes, there are assistant medical officers for specialist branches dealing with tuberculosis, maternity and child welfare, school-children, bacteriology, or venereal diseases, and clinical medical officers for ear, eye, nose, throat, and skin defects and minor ailments. Obviously, only a small percentage of these assistant medical officers can become medical officers of health, and a principal consideration with the Society of Medical Officers of Health has been to devise a graded list of appointments that would encourage experienced men to remain in the service. It should be recognised, therefore, that we have now in the public health service two types of assistant, although in the smaller areas one medical man may combine the duties of both. But it seems likely that the types will become more and more distinct as the organisation of the public health service develops, so we may consider here the training and experience which should be expected of candidates for these posts.

### *Assistantships in the Service.*

*Administrative Posts.*—The young medical graduate whose ultimate ambition is to become a medical officer of health, has several years' work ahead of him before he should seek his first appointment. Under the new regulations of the General Medical Council it will take him two years to acquire his D.P.H. or other specialist qualification in State medicine. For a further period he should hold resident appointments in hospitals for women and children, and for the treatment of ear, eye, nose, throat, and skin affections. All this in order that later on he may be competent to administer the various health schemes of his local authority. It is also advisable that he should serve for six months or so as assistant to a busy general practitioner, so that he may realise the difficulties to be contended with in that field. The head master of Westminster School lately urged[3] that there should be no hurry or impatience in the education of the young doctor, whose training must necessarily be more prolonged than in the case of other learned professions. The head master indicated 27 years as the age when the public began to feel confidence in a private practitioner, and it is about that time the average graduate is ready for his first appointment in the public health service. Even then he should extend his experience by entering as a resident medical officer at a municipal fever hospital or tuberculosis sanatorium. It will be seen, therefore, that the medical man who wishes to equip himself thoroughly for the highest administrative posts in the public health service will not have completed his full training much before his thirtieth year.

*Specialist Posts.*—Although a public health qualification is not essential for those entering specialist branches of the service it is very desirable, for even

[1] Although an official of the Society of Medical Officers of Health, the writer of this article accepts sole responsibility for the statements set out here, which represent his own interpretation of the considerations which brought about the movement for a scale of salaries for the public health service.

[2] Throughout the article all references to medical officers apply equally to men and women practitioners, it being understood that there should be equal remuneration for both sexes.

[3] Brit. Med. Jour., March 8th, 1924, p. 438.

the clinical activities of the health department should be based on the general scheme for the prevention of disease. Beyond this point he will follow the usual course of training for his particular branch of work by residence and attendance at the appropriate special hospitals. If he is wise, and if he hopes to attain a senior post in the public health service, he will take one of the higher qualifications in medicine or surgery, for the value of the specialist medical officer depends very much on the confidence he inspires amongst the private practitioners in his area. Hitherto these posts have been so badly paid that the claims of the men appointed to be regarded as specialists have sometimes been very slender, so that the experienced general practitioner has felt no great respect for suggestions coming from the public health department. It was in order to attract highly qualified men for these clinical posts that the Society of Medical Officers of Health decided it was necessary to grade these appointments and to offer them reasonable prospects of advancement on the lines indicated below.

*Minimum Commencing Salaries.*

We thus arrive at the necessity for a minimum commencing salary for medical men entering the public health service. The Society of Medical Officers of Health contend that highly-trained men are required for these posts and that the right type of candidate will be nearly 30 years of age before he is ready for his first appointment. The Society therefore recommended that the minimum commencing salary should be £600 per annum, on the understanding that entrants must have had three years' professional experience subsequent to obtaining their registrable qualification. This recommendation was approved and adopted by the annual representative meeting of the British Medical Association at Portsmouth last July, and advertisements offering less remuneration for assistant posts are no longer accepted by the professional journals. It is satisfactory to note that local authorities are realising that this minimum is a reasonable one, and over 20 assistant medical officers have been appointed at £600 since September last. In a number of cases the minimum has been resisted and, unfortunately, there have been applicants who were willing to accept the posts. On several occasions, however, the appointing authorities have not been satisfied with the restricted selection open to them on such terms, and the vacancy has been readvertised offering the recognised salary. Even when candidates are willing to seize an easy opportunity of securing a post, it is recognised by local authorities that their health departments lose prestige when appointments are not approved by the representative bodies of the profession.

*Promotions and Increments.*

It must be understood that the £600 minimum applies only to a junior assistant working under the medical officer of health, or under a senior medical officer. The latter category includes those medical officers who are in charge of departments (e.g., schools, tuberculosis, venereal diseases, maternity and child welfare, mental deficiency) and who are directly responsible to the medical officer of health, or, more rarely, as in the case of some school medical officers, to a committee. The minimum commencing salary for these senior medical officers is fixed at £750 when single-handed, rising to £1100 for those with six assistants, with increments of £50 for each additional two assistants. In the case of a deputy medical officer of health duly appointed to assist his chief in the general administration of the health department, the minimum commencing salary must be equal to 60 per cent. of the salary of the medical officer of health and not less than the salary of the next grade of medical officer in the department. Finally, we have the scale for medical officers of health commencing with a minimum of £800 in areas where the population is less than 35,000, and ascending by graded increases to £1800 for populations exceeding 600,000. The scale thus briefly summarised has been widely circulated by the British Medical Association with recommendations that the salaries indicated should be augmented by annual increments of 5 per cent., rising to 40 per cent. above the minimum basic rates, as an encouragement to experienced men to remain in the service. It is also understood that the above scale is not subject to reduction when the civil service bonus at present granted in many areas is reduced or withdrawn, such bonus being a definite addition to meet temporary economic conditions. An important principle embodied in the scale by the British Medical Association is that all public health salaries must be net, any expenses necessitated by the duties being paid by the local authority.

*Enforcement of an Equitable Scale.*

Those who are chiefly concerned believe that the adoption of this scale by the British Medical Association will have a marked effect on the enterprise and efficiency of the public health service. They believe also that the continuance of low salaries represented a real menace to the interests of the whole profession. This became obvious quite recently when the Ministry of Health, seeking to justify a reduction of the capitation fee for insurance practitioners, informed the Court of Inquiry that "for public health appointments men of superior qualifications, and in the case of medical officer of health appointments, men approaching middle age, can be secured for salaries in the neighbourhood of £800." In support of that statement the Ministry published a table showing that 97 principal posts had been filled in the three years 1920, 1921, 1922 by men aged about 39 at salaries less than £800 per annum.

The scale as now adopted is the result of nearly five years' work by a committee of the Society of Medical Officers of Health in frequent conference with representatives of the British Medical Association. It has received the sanction of the annual parliament of the profession, and it is being enforced with the invaluable and indispensable assistance of the professional journals. It was submitted for the information of the associations representative of county, borough, and district councils, who were invited to indicate any modifications which would make the scale more easily workable. It is much to be hoped that negotiations with these bodies will ultimately result in an agreement that will avoid disputes in reference to the terms of future appointments.

Meanwhile, it is the bounden duty of every medical man to support his colleagues in their efforts to place the remuneration of the public health service on a fair basis. It is not only the new entrants who are affected, but those already in office will benefit when the inadequacy of existing salaries becomes conspicuous in comparison with the pay of junior appointments. For quite obviously the enforcement of the new scale will be followed almost automatically by an adjustment in the payment of the whole public health service. Only one precaution is necessary for those who are not familiar with the scale,[4] they should apply for no public health appointment which is advertised only in the lay newspapers until they have inquired of the British Medical Association or the Society of Medical Officers of Health whether the terms are approved by those bodies. With loyal coöperation of this kind the attempts by local authorities to obtain cheap medical services will soon be abandoned.

[4] The scale was set out in THE LANCET, July 28th, 1923, p. 187.

MEMORIAL TO THE LATE DR. G. S. HART.—To memory of the late Dr. Hart, of Measham, a Dodge Motor Ambulance was dedicated on March 12th in the Market Square of that town in the presence of a large gathering of his former patients and friends. After the service Dr. R. Logan, of Ashby-de-la-Zouch, gave a memorial address and spoke in feeling terms of his late friend and colleague. The cost of the ambulance had been subscribed largely in the district, and former colleagues of the late Dr. Hart in Ulster had also contributed generously. Dr. Hart died in September of last year, and his death had been a great loss to the district.

## MEMORIAL TO LORD LISTER.

THE memorial to Lord Lister, in bronze and granite, designed by the late Sir Thomas Brock and erected in Portland-place, London, W., was unveiled on March 13th by Sir John Bland-Sutton, President of the Royal College of Surgeons of England, in the absence, through illness, of Sir Charles Sherrington, President of the Royal Society.

Lord Hambleden, Deputy Chairman of the Executive Committee of the Lister Memorial Fund, opened the ceremony by outlining the history of the Fund. He said that very soon after Lord Lister's death in 1913 a committee was formed at the instance of the Royal Society and of the Royal College of Surgeons, with the object of commemorating the services of Lord Lister to science and to the alleviation of human suffering. That committee suggested that there should be in the first place a tablet, with a medallion and inscription, in Westminster Abbey; in the second place, a monument in London; and thirdly, the establishment of an international Lister Memorial Fund for the advancement of surgery, from which grants could be made for research and for distinguished contributions in surgical science, irrespective of nationality. A meeting was held at the Mansion House, and subsequently an appeal was circulated which met with response from all quarters of the world. Altogether, including interest, a sum of nearly £12,000 had been made available. The tablet had been placed in the Abbey for some time; and £5000 had been given to the Memorial Fund, which was in the care of the Royal College of Surgeons; and, finally, they had the statue. They were greatly indebted,

FIG. 1.

The Island Site in Portland-place, London.

he said, to Sir John Rose Bradford, hon. secretary, and Mr. F. A. Towle, assist. hon. secretary, for the very efficient administration of the business of the Fund.

Sir John Bland-Sutton then unveiled the statue and spoke as follows: "This memorial has been raised to the memory of a great surgeon, Lord Lister, who by his discoveries in science and his devotion to surgery united surgery and science, raised the art he practised, and launched it on the most wonderful era in its history. It is an honour to unveil this monument as a memorial of a genius who did so much to unveil the secrets of nature and taught surgeons safe methods for relieving men, women, and children from the dread consequences of septic infection. Veterinary surgeons apply the same principles when performing operations for the relief of physical suffering on horses, cattle, cats, and dogs. Lord Lister had the rare advantage of seeing his principles adopted by surgeons throughout the world. His influence will remain as long as surgery is practised as an art, and the principles he discovered will remain as a blessing on every race of mankind. He was inflexible in the pursuit of truth and may be described as patience personified."

FIG. 2.

The bust of Lister surmounting the memorial.

Lord Hambleden asked the Mayor of St. Marylebone to take the statue under the care of the borough council, which duty the Mayor accepted, on behalf of the present and future councils.

Among those present were:—

Sir Rickman and Lady Godlee, Sir William Lister, the Misses Lister, and other members of Lord Lister's family; Viscount Hambleden, the Mayor and Mayoress of St. Marylebone, Sir John Rose Bradford and Lady Bradford, Sir Frederick M. Fry. The Royal Society was represented by Lieut.-Colonel Sir David Prain, Mr. W. B. Hardy, and Mr. J. H. Jeans, Sir Arthur Schuster, Sir David Ferrier, Sir Frederick Mott, and Sir Arthur Keith; The Royal College of Physicians of London by Sir Humphry Rolleston; the Royal College of Surgeons of England by Sir John Bland-Sutton and several members of Council; the Royal College of Surgeons in Ireland by Sir William de C. Wheeler; the Royal Society of Medicine by Sir William Hale-White; the Medical Society of London by Dr. H. R. Spencer; the Lister Institute by Prof. C. J. Martin; the University of London by Mr. H. J. Waring; the University of Glasgow and the Royal Society of Edinburgh by Prof. F. O. Bower; the Glasgow Lister Memorial Committee by Lord Blythswood, Sir John S. Samuel, Prof. R. Kennedy, and Prof. Magnus Maclean. There were also present: Sir Charles Ballance, Sir D'Arcy Power, Sir Cuthbert Wallace, Sir Alfred Fripp, Sir Anderson Critchett, Sir G. L. Cheatle, Sir George Makins, and Mr. Henry Jones, a faithful servant of Lord Lister for 40 years.

---

WHIPPS CROSS HOSPITAL, LEYTONSTONE.—A reception on the occasion of the twenty-first anniversary of the opening of this institution will be held at the hospital on March 26th, when a conference, followed by a discussion, on Medical, Nursing, and Hospital Progress will take place. Dr. J. C. Muir and Mr. Thomas Smith, clerk to the guardians, will read papers.

# THE LANCET.

*LONDON: SATURDAY, MARCH 22, 1924.*


## ON INQUESTS AND AUTOPSIES.

MEDICINE as well as justice requires the accurate determination of the cause of death in all cases brought to the notice of the coroner. But in many parts of the country the lack of any provision for storing bodies is a real stumbling-block to this determination. The unsuitability for its purpose of the existing mortuary at Ipswich was brought to the notice of Parliament a few days ago by the representative of the borough, when the Under-Secretary of State for the Home Department was asked whether his attention had been drawn to the coroner's statement that he had been compelled to ask the proprietor of an hotel to allow a body to remain in the hotel until after an inquest on account of the unsatisfactory mortuary accommodation. Dr. A. H. BYGOTT, medical officer of health for West Suffolk, who recently brought the subject before the Royal Institute of Public Health, writes of the conditions under which post-mortem examinations are made in rural areas as being frequently disgusting. Twelve thousand post-mortem examinations are made annually by order of coroners, without affording proper means of instruction to medical students or for the collection of pathological knowledge. Dr. BYGOTT regards the viewing of the body by jurors as unnecessary; were this dispensed with, the body could be moved to a pathological department at some large centre, where pathological, chemical, and bacteriological investigations could be made. We agree that viewing the body is a small matter which might be abolished without harm, especially as many men and women see death for the first time when acting as jurors. The provision of mortuaries, however, at present rests with the local authorities, upon whom it is difficult to bring compulsion, for the Home Department has stated that it has no authority in the matter.

The Public Health Act, 1875, Section 141, states that the local authority may, or if required by the Minister of Health must, provide a mortuary, and Section 143 states that the authority may provide a post-mortem room, although there is no compulsion. Under the provisions of the Public Health (London) Act, 1891, every sanitary authority shall provide and fit up mortuaries, and if ordered by the county council must provide a most-mortem room, but no details are given for the staffing or provision of apparatus. Perhaps the question should have been addressed to the Minister of Health rather than to the Home Secretary. The condition of London mortuaries is good on the whole, although a year or two ago the post-mortem room attached to a mortuary (not associated with a hospital) was lighted only by fish-tail burners, and the only hot water available was from kettles. In country districts, where provision of mortuaries could not lightly be undertaken, the arrangements are often primitive; the pathologist may have to be content with the kitchen of an empty cottage near by. Doubtless the frequent reluctance on the part of coroners and doctors to holding post-mortem examinations is often due to this lack of accommodation. Regarding equipment, the London mortuaries are on the whole good, but in some respects are lacking. It often happens that there are no proper jars available if viscera are to be reserved for examination, and analysts frequently receive consignments in old jam jars or tins, tied up with newspaper and string, and unlabelled. It is doubtful if any of the mortuaries have apparatus for the preservation of material for bacteriological examination.

When it is considered necessary to hold an inquest it is equally necessary to hold a post-mortem examination in most cases, if the inquiry is to be satisfactory. And yet out of 5551 inquests collected from various parts of England, Dr. BYGOTT found only 2608 post-mortem examinations. Analytical and possibly bacteriological investigation may be desirable. A coroner has been known to decide against a post-mortem examination, although the issue was a choice between murder, manslaughter or suicide; such a decision may render exhumation necessary, and reopening of the whole proceedings. Directly or indirectly pressure is brought to bear on coroners to limit examinations with a view to saving expense, and also on doctors by relatives for this and other reasons. The provision of expert pathologists, analysts and bacteriologists is to be commended—if investigations were more thorough many more crimes would come to light—but there is little financial inducement to take up this class of work, and little encouragement to perform it thoroughly, when the law as it stands insists on experts being present at every adjourned inquest. In some cases the fee offered to the pathologist hardly covers expenses. The suggestion has been made to remove bodies to hospitals, at any rate in country places, so that a full investigation may be made. But as far as teaching hospitals are concerned, they already have sufficient material to keep their regular staff busy; the larger non-teaching hospitals may have a pathologist but no analyst, so that materials would still have to be sent to the public analyst. Only in exceptional cases does the Home Office intervene. Whether hospital pathologists would welcome continuous attendance at the courts on the present rates of remuneration is hardly doubtful; in country cases there would be the extra expense of transporting the body, and a longer call on the pathologist's time. With the suggestion that the functions of the coroner should be transferred to the medical officer of health we are not in agreement. The health officer has duties which bring him into contact with his fellow citizens in a variety of ways. For a semi-judicial inquiry of this type, it seems pre-eminently desirable to choose an independent person having no relation with municipal or other public duties, and not under the direction of a local council. We should like to see more whole-time coroners serving wider areas. That the coroner should be a medical man has always been advocated in our columns. If he is also a barrister so much the better, but if not any legal errors which he may commit, such as the transgression of the laws of evidence, are less important than medical errors, for legal errors can always be rectified in another court. Legal authorities have always opposed the holding of inquiries in camera, but in certain cases it might be desirable to admit only those persons who could give good reason for desiring admission, to the exclusion of the idly curious.

## ADOPTION OF CHILDREN.

OVER 40 years ago New Zealand legislated for the adoption of children. Unlike the laws of ancient Rome, which mainly studied the provision of heirs for childless parents, the legislation of modern communities on this subject is chiefly concerned with the welfare of the child. New Zealand had realised that foster-parents can give the same care and affection to an adopted son or daughter as the natural parents themselves, and that, where this is the case, it may be advisable to give legal security to the relationship between foster parent and adopted child. Otherwise when a child has been removed from the control of unworthy and disreputable parents and placed with persons who give it proper care and often spend considerable sums upon its education, the original parents can disturb its well-being and its prospects by reclaiming it from the family in which it may be happily settled. Readers of Mr. KIPLING'S story "Friendly Brook" may consider his picture of the disreputable father blackmailing the family into which his child has been adopted to be uncomfortably close to the truth. Other countries have passed adoption laws similar to those of New Zealand. Possibly the war stimulated such legislation. Italy, at any rate, made special provision in 1919 for the adoption of war orphans. Since that year, within the Empire, British Columbia, Ontario, Saskatchewan, and Tasmania have passed Acts giving legal recognition to adoption. And now the Mother of Parliaments has before her at the present moment three Bills all dealing with the adoption of children and all emphasising the principle that adoption is not to be sanctioned unless it is likely to promote the welfare of the child.

Of these three Bills, Sir THOMAS INSKIP'S is the shortest, and therefore, in present Parliamentary conditions, the most hopeful. He would simply enact that parents or guardians may transfer their authorities and duties in respect of a child, subject to the approval of a county court or High Court judge. The Bill closely follows that of Mr. NICHOLSON which obtained a second reading in 1922, and that of Sir LEONARD BRASSEY presented in 1923, except that the adopter is no longer described by a harsh legal label as "transferee" of the child, and that the age-limit for adoptable children is raised from 7 to 10 years. The proposal contains the minimum. The other two Bills, one promoted by Sir M. MACNAGHTEN, the other by the DUKE OF ATHOLL, go into greater detail, much of which is common to both. They specify various conditions of adoption and various persons whose consent must be obtained. They do not restrict adoption to children under 10, but stipulate that if the child is over 12 its consent is necessary. They insist that the adopter must be at least 20 years older than the child adopted, and they prohibit marriage between the two. They allow the court to adjourn an application for adoption while permitting the child to be placed meanwhile with the proposed adopter, thus sanctioning a kind of temporary adoption on approval. Finally, while providing for registration, they make the records confidential. The DUKE OF ATHOLL'S Bill has special features. It has had a second reading in the House of Lords, and must be distinguished from the unpublished Scottish Bill introduced by the DUCHESS OF ATHOLL in the House of Commons. As befits a House of Lords measure, it proposes that adoption shall not affect the succession to any dignity or title of honour. It brings the adoptive relationship within the prohibited degrees already recognised by our marriage laws, and it extends the law of incest to adopted children—no doubt in recollection of a New Zealand case where an offender raised the defence that the child in question was an adopted child. The DUKE OF ATHOLL'S Bill confines itself to county court machinery and makes the county court judge's decision for most purposes final. It speaks throughout of "the child," and yet it contemplates the adoption of persons up to 21 years of age provided that they have no husband or wife living. The Macnaghten Bill, which is virtually identical with one presented by Mr. HURST in 1923, allows the abrogation of adoption for any good cause at the instance of the adopter, or the child (if over 16), or any relative or other person interested in the welfare of the child. If the court sanctions the abrogation, the parties are put back in their original positions as though no adoption had ever been made; if it is the adopter who wants the relationship ended, the court may insist on provision for the child.

The elaboration of detail increases the difficulty of draftsmanship. Sir M. MACNAGHTEN says a proposed adopter must be "of good repute," a happier expression than the original New Zealand stipulation that he should be "respectable." The DUKE OF ATHOLL in ampler phrasing would require him to be "a fit and proper person, having regard to all the circumstances, to have the care and custody of the child," and to be in a position and to intend to provide "suitable and proper maintenance and education as though it were his own child." If our county court judges are to be called upon to make the proposals work, they will appreciate the implied compliment to their abilities while conscious of the great addition to their already heavy duties. Competent observers of the working of the Adoption of Children Act in New Zealand, where the original provisions of 1881 were simplified in 1895 and have since been further amended in the light of experience, claim that it is a success from every point of view. It has been estimated that in a large proportion of cases the adoption orders relate to illegitimate children. The child benefits by obtaining a continuous home life, an environment equal to that of an ordinary legitimate child, and a proper chance of becoming a useful citizen. The adopting parents, perhaps childless, obtain a son or daughter whom they can regard and care for as their own. The State is relieved of the possible burden of maintaining the child. New Zealand makes provision for rescinding adoption orders in unsatisfactory cases, but it is stated that the percentage of these is very small. The social conditions and the legislative requirements of great pioneer communities overseas are not always identical with those of the home country; but England cannot afford to dispense with any measure which will better the welfare and the chances of children who will otherwise be neglected and handicapped unfairly in their upbringing. The association of illegitimacy with many deplorable and intractable conditions which come under medical notice, should ensure for a proper method of adoption the support of our profession.

## THE EFFECT OF MATERNAL SYPHILIS ON THE DEATH OF THE CHILD.

AN investigation[1] of 1000 women of the hospital class in Glasgow has recently been undertaken just before, at, or immediately after labour, with the object of determining the incidence of syphilis in such women, of congenital syphilis in their children, and the effects of syphilis on the frequency of abortion,

[1] Child Life Investigation. Maternal Syphilis as a Cause of Death of Fœtus of the New-born Child. By John Norman Cruickshank, M.D., F.R.F.P. and S. Medical Research Council, Special Reports, No. 82. 1924. H.M. Stationery Office. 1s. 6d.

premature birth, and stillbirth. The work has been carried out for the Medical Research Council by Dr. J. N. CRUICKSHANK, and has evidently been painstaking and thorough. In the series of 1000 cases 9–10 per cent. gave a positive Wassermann reaction, and as a certain small number of cases admittedly fail to give a positive reaction in pregnancy, any slight error is doubtless in favour of the patients. This percentage corresponds with that of most recent observers in this field. Dr. CRUICKSHANK found that in practically every case (94 per cent.) the W.R. of the mother was in agreement with the reaction of the child at birth. He queries, however, the interpretation of a positive W.R. in the case of the new-born child: Is it the reaction of the child's blood—may it not be due to transference of the mother's reacting substances to the fœtal circulation? An investigation, carried out by Dr. H. C. BRUNNER[2] at a maternity hospital in Lausanne, brings out the fact that the Wassermann reaction is not very reliable in the diagnosis of congenital syphilis in the new-born. Among 150 new-born infants whose blood, taken from the umbilical cord at birth, was examined by the Wassermann test, there were only two giving a positive reaction, although at least six of the mothers were definitely syphilitic and Wassermann-positive. Curiously enough, in the only case in which the mother had contracted syphilis late in the course of her pregnancy, the new-born infant, as well as the mother, was found to be Wassermann-positive. A comparison of the Wassermann reactions in the mother and child in 113 cases of maternal syphilis of recent or old standing showed that it was positive in both mother and child in 50 cases, positive in the mother and negative in the infant in 35 cases, and negative in both mother and infant in 28 cases. There was not a single case in Dr. BRUNNER'S series in which this reaction was negative in the mother and positive in her infant.

As regards incidence of abortion, which Dr. CRUICKSHANK interprets as "birth of child before it was viable"—his figures prove no greater percentage of abortions in the group with positive W.R. over the group with negative results. Stillbirths were proved to be more frequent in syphilitic cases—18·07 per cent. as against 15·15 per cent. of non-syphilitic cases; and as he further demonstrates that a considerable proportion of the latter were sent into hospital with obstetric complications, almost inevitably causing death of the child, the figures could easily be made more striking if normal deliveries in syphilitic and non-syphilitic cases were compared. The incidence of premature births (after seven months) was vastly greater also in the syphilitic cases—32·5 per cent. of syphilitic cases as against 19·8 per cent. of non-infected women, and in this group of infected cases 68·7 per cent. had stillborn as well as premature babies. No relationship was proved to exist between ante-partum and post-partum hæmorrhage and syphilis, nor was syphilis found to be at all an important factor in the ætiology of eclampsia. In the cases which could be followed up for some months after delivery, a definitely larger percentage of infants with a positive W.R. died, compared with those non-infected. While not providing any strikingly new data on the subject, this independent and patient study of 1000 cases is well worth recording as confirmation of previous knowledge in a field not yet fully explored.

[2] Schweiz. med. Woch., Jan. 24th, 1924.

# Annotations.

"Ne quid nimis."

## TREATMENTS IN VOGUE IN GERMAN SANATORIUMS.

THE pooling of German sanatorium reports and their editing by Dr. H. Ulrici every year in *Beiträge zur Klinik der Tuberkulose* enable readers to ascertain in a few minutes what are the most popular therapeutic measures in German sanatoriums. Dr. Ulrici's latest review[1] covers the year 1922, and deals with the reports of 40 hospitals for diseases of the lungs. Considering how varied the treatment was, it is disappointing to find that only 15 per cent. of all the cases of "open" tuberculosis became sputum-negative during treatment. Perhaps one of the most important excuses for these meagre results is to be found in the shortness of the average duration of treatment; in as great a proportion as 84 per cent. of the adult male patients the duration of treatment was three months or less. Only 11 of the 40 hospitals practised artificial pneumothorax, 626 of 7068 patients suffering from "open" tuberculosis in the second and third stages being given this treatment. But whereas only 8·9 per cent. were treated by artificial pneumothorax, 26 per cent. were treated with some form of tuberculin. Ten different tuberculins or tuberculin methods were employed by these 40 institutions, and the three most popular methods, to judge by the number of patients treated, were Petruschky's, Ponndorf's and Much's (partial antigens). The least popular was Selter's "vital tuberculin," which was given in only five cases. Only 28 patients were treated with protein injections, whereas as many as 453 were given some form of chemo-therapy, the gold salt, krysolgan, heading the list with 289 cases. Sun-baths are, apparently, not yet popular in German sanatoriums, and only 1·7 per cent. of all the adult cases of pulmonary tuberculosis were given this treatment. Treatment with artificial light was much more popular, being given in 11·1 per cent. Of 2373 children, only 3·5 per cent. were given sun-baths, whereas 24 per cent. were treated with some form of artificial light. With regard to the results claimed for these various methods of treatment, even the most ingenuous and impressionable reader must be tempted to draw the conclusion that it is the nature of the disease rather than the nature of the treatment that determines the issue. Tuberkulomucin achieved good results in 56 per cent. of the first- and second-stage cases, and the same measure of success was claimed for old tuberculin, albumose-free tuberculin, and bacillary emulsion. Petruschky's tuberculin inunction was beneficial in 61 per cent., partial antigens in 65 per cent., artificial radiation in 63 per cent., and, in the case of children suffering from surgical tuberculosis, in 99 per cent. Until therapeutic claims are supported by an account of the exact nature of the disease and its activity in the patients cured, the sceptical will continue to doubt the efficacy of the *vis medicatrix hominis*.

## A CLINICAL ANTHOLOGY.

INDIVIDUAL feelings as to the general value of anthologies vary. Some regard them as a superfluity; others may find in them a pleasant form of reading, which demands no great intellectual effort. Usually such compilations of other people's works are extracted from poetical or prose literature dealing with some particular aspect of life or nature. The application of this principle to medical books is a new idea which may well make an appeal to certain practitioners and students. Dr. W. F. Dutton has compiled an anthology[2] of intravenous therapy, which will be valuable for reference and will certainly appeal strongly to all those who intend to devote their lives

[1] Beiträge, 1924, lvii., 332.

[2] Intravenous Therapy. By Walton Forest Dutton, M.D. Philadelphia: F. Davis Co. 1924. Pp. 542. $5.50.

to attaining a special skill in this branch of medicine (or is it surgery?). The insertion of a syringe needle into a vein is an operation which requires much skill for its certain performance, and it will be encouraging to the intending specialist to find that so wide a field will be open to him. Several chapters are devoted to an account of the theory and practice of blood transfusion. Other subjects discussed at length are the use of arsenic compounds and intravenous anæsthesia. The second and larger part of the book deals with all the other conditions for which medicaments may be injected into a vein. These are arranged alphabetically and number no less than 108. All forms of treatment available for each condition are mentioned, as well as those that are more strictly intravenous. The book may be depended upon to give the most recent form of treatment available in each case. Thus the author emphasises the importance of the intravenous injection of caseosan for the various complications of gonorrhœa. The value of the book is enhanced by a number of excellent illustrations, some in colours, depicting the median basilic vein, the best method of constricting the upper arm with a bandage, and other points of importance. Dr. Dutton does not, as an honest anthologist, claim any originality for his book except as regards the idea. He is unable to find that any similar work has yet been published.

## A DIET SCHEME FOR THE TROPICS.

THE special physiology of the white man in the tropics has recently been enlightened by two suggestive papers[1] from the pen of Dr. H. W. Kipping, of the Physiological Institute of the University of Hamburg. In these he points out that, apart from diseases, the great problem of the tropics is how to keep cool. The environment of the body cannot usually be much altered, but, within that environment, the temperature of the body is raised by work and food and lowered by sweating, which, however, gives little relief if the surrounding air is very damp as well as hot. It must be, therefore, our endeavour to avoid raising the body temperature, carelessly, without reason. White men are more liable than natives to heat-stroke, because they work harder and so raise their temperature more. Dr. Kipping gives instances of healthy European firemen whose body temperatures, when working in the fire-room during the passage of the Red Sea, rose to 101·5° F. The maximum safe output of work is, he thinks, a matter for calculation, being a function of the drying power of the air, its temperature, and its movement. But taking food also raises temperature, especially protein food; fats and carbohydrates exert less effect, and can be stored if taken in excess of immediate requirement. Proteins break up into amino-acids which, circulating in the blood, stimulate the tissues to increased metabolism, so raising the temperature of the body; this is their specific dynamic action. Since they cannot be stored, any excess taken in must be at once further broken down, whereby temperature is still further raised. Dr. Kipping concludes that in the tropics, proteins should be taken only sparingly during the hotter part of the day, the main protein meal being arranged to occur in the cooler evening. Where fruits are plentiful, the need for vitamins is supplied. Protein is more of a difficulty; 100 g., according to Voit, are required daily, but to get that from rice, for example, would compel the eating of five pounds daily, with a total caloric value of 5400, or about double what is required. The protein must not be supplied from a single source, as the right proportions of cystin, tyrosin, tryptophane, and the like, do not exist in every food. As to cellulose, Dr. Kipping holds strongly that there must be in the food some element, bulky, unabsorbable, and yet unirritating, to increase the mass of the intestinal contents and, by assisting peristalsis, to prevent constipation. This cellulose is easily obtained from fruits, salads, and bread made from coarse flour. After this evening protein meal, the office-worker can be quiet in a long chair, not further raising by muscular activity his temperature, already slightly raised by digestion. In Java, Dr. Kipping tells us, doctors not vegetarians in principle took to living exclusively on vegetable food. He puts forward himself the following scheme for food for a tropical day—Breakfast: tea or coffee, bread, butter, jam, pineapple or banana fritters, fruit. At midday: rice (not too much) with vegetables, salads, a little fish, fowl, or egg; all to be nicely cooked, but taken in small quantity. In the evening comes the main meat meal. The moral of Dr. Kipping's articles may be put briefly: Self-denial at lunch will keep you cooler through the afternoon.

[1] Archiv für Schiffs- u. Tropen-hygiene, 1923, pp. 177 and 404.

## GENERAL PARALYSIS IN OLD AGE.

Dr. Paul Carretti,[1] who has devoted his inaugural thesis to the consideration of the clinical aspects of general paralysis in old age, records 19 cases in patients aged from 60 to 72, including two which came under his observation in the service of Dr. Capgras in the Maison Blanche Asylum. The course of the disease is, as a rule, more rapid in old age than in earlier life, and remissions do not occur. Although there are a few instances on record in which senile general paralysis has lasted several years, in the majority of cases the disease proves fatal within 12 months. The interval between the primary syphilitic lesion and the appearance of the first signs of general paralysis is very variable and does not affect the course of the disease. In two of Dr. Carretti's cases the first symptom of general paralysis appeared 12 years after the chancre, which is the ordinary period in adult life, but more frequently the syphilitic infection had been contracted much earlier—namely, 30, 40, or even 45 years before. Only three of the present series occurred in women, a fact which shows that the influence of sex persists in old age. The symptoms consist in dementia with all the features of senile enfeeblement, such as diminution of memory for recent events, impairment of affectivity and judgment, relative preservation of consciousness of a morbid state and of the moral sense, frequent absence of delirium, and focal signs of dementia such as paraphasia and agnosia. The cerebro-spinal syndrome, which consists in abundant lymphocytosis, a positive Wassermann reaction, moderate increase of albumin, and slight diminution of the sugar and chlorides in the cerebro-spinal fluid is constantly positive and is a valuable guide to the diagnosis of the condition, which otherwise might be mistaken for ordinary senile dementia.

[1] Thèse de Paris, 1923, No. 392.

## ZOOLOGY AND EUGENICS.

IN the last four or five years a good many zoologists have been interested in the application of their science to the welfare of mankind, and it is round this central notion that a diversity of essays has been collected into one volume.[2] Prof. Holmes writes well and interestingly on many topics—the present tendency of evolutionary theory, heredity and the mind, the biological fortunes of the negro, birth control, panmixia and degeneration, civilisation and natural selection. He has the usual chapter on "our deteriorating inheritance," and draws the usual gloomy picture of the college graduates who won't heed, and the degenerates who heed too much. But he differs from most writers on this well-worn theme in pointing out that, while it is useful to control the multiplication of the mentally defective, it is far more important that those who chide such prolificity should themselves be fruitful. A community, he says, can do alright with a few degenerates if it has also great men and women who really make a difference in the world; the chief danger at present is a uniform mass of dull mediocrity. Biologically his doctrine is sound enough.

[2] Studies in Evolution and Eugenics. By S. J. Holmes, Ph.D., Professor of Zoology in the University of California. London: Routledge and Sons. 1923. Pp. 261. 12*s*. 6*d*.

As is well known, though seldom stated, it is impossible to make any very great difference in the prevalence of recessive characters like mental deficiency by segregating those in whom they are manifest; disastrous combinations of unrecognisable heterozygotes would go on producing a supply for a very long time, even if all mental defectives were killed at sight. But a deliberate and concerted attempt by college graduates to furnish a due supply of proper persons is a much better heeding proposition because the failures, who are not exceptionally gifted, will, in nearly all cases, be at least tolerably good citizens. We would commend his doctrine to eugenic propagandists. His discussion of the insoluble negro problem suggests that increasing urbanisation and decolorisation, with a birth-rate falling faster than the death-rate, may soon lead to a decline in their numbers in America, and possibly to their practical extinction. The paper on infantile mortality draws attention to the curious fact—not, of course, newly observed—that whooping-cough is the one cause of death which kills more girls than boys. Males are the frailer sex. In early fœtal life there is a great excess of males which at birth is reduced almost to equality, and in the first few years of life changes to a preponderance of females. Some of the essays are slight—e.g., those on sexual selection and the effect of birth control on fertility. None is very deep, but none is meant to be. The book is intended for general reading, and people with very varied interests will read it with profit.

## BISMUTH IN THE TREATMENT OF INTERSTITIAL KERATITIS.

IN a paper headed "Is Parenchymatous Keratitis Curable?" Dr. G. Kleefeld[1] has drawn attention to the modern high standard by which complete recovery from interstitial keratitis is judged, improved illumination and the corneal microscope betraying permanent flaws which more primitive methods of examination fail to disclose. Even when vision has been restored to normal, Dr. Kleefeld has never failed to demonstrate with the corneal microscope persistence of white patches and corneal blood vessels formed during the acute stage of the disease. At least this was the case before he began giving injections of bismuth. In one of his cases, given bismuth, the patient came under treatment in the early stage of œdema of the cornea. Vision was already reduced to finger-counting, although the duration of the disease was only three weeks. Injections of bismuth were given without any great hopes, but after eight days the œdema of the cornea had largely disappeared, only two or three small vascular bundles having succeeded in penetrating the cornea. The treatment was continued, and the œdema disappeared so completely that when the patient was examined three months later even the corneal microscope failed to show any lesion. It is probable that complete recovery can be effected by specific treatment only before or during the stage of œdema; when this has passed off the patient's fate is settled for better or worse. In a second case, in which one eye after the other was involved, the injection of bismuth aborted the evolution of the keratitis in the second eye after several injections had saturated the body with bismuth. In a third case, in which sulpharsenol had been given for a long time without any relief, and there were signs of glaucoma on the left side, the injection of bismuth was followed by the complete disappearance of ocular congestion, a return of the intra-ocular pressure almost to normal, and by diminution of the corneal opacity. Dr. Kleefeld gives little information as to the dosage of bismuth adopted in these cases, but he sounds the warning that bismuth may prove toxic to the optic nerve, and he therefore advises caution in the dosage till more is known of the affinity of bismuth for the nervous system. Hitherto the treatment of interstitial keratitis with mercury, arsenic, and iodides has been very disappointing, and if Dr. Kleefeld's favourable experiences with bismuth are confirmed, the outlook for this class of patient should be much better than it has been in the past.

[1] Le Scalpel, Jan. 26th.

## MENTAL DEFECT IN EARLY CHILDHOOD.

ALTHOUGH the literature dealing with mentally defective children of school ages is abundant, little has been written about mental defect at an earlier period, at the time when these children are brought to the practitioner for diagnosis, and when appropriate treatment might yield the greatest benefit. The subject of the symptoms, diagnosis, and treatment of mentally defective children was therefore chosen by Dr. John Thomson for the course of Morison lectures on mental disease, recently delivered in the Hall of the Royal College of Physicians of Edinburgh. The clinical material on which the lecturer drew consisted in the notes of 1200 cases, 952 of which had been under 5 years of age. In the matter of classification, Dr. Thomson holds that of Dr. A. F. Tredgold to be the best of those which attempt to combine pathology with clinical findings. Cases are divided into two large groups: (*a*) Primary amentia, in which there is an original incapacity of the cerebral neurons for proper development; (*b*) secondary amentia, which are due to an arrest of development of the brain, usually at a later stage from some extraneous or accidental cause. Dr. Tredgold, dealing with children of school age, or older, includes 85–90 per cent. of the cases in the primary group and 10–15 per cent. in the secondary. Dr. Thomson's figures, referring to younger children, are: Primary, 57 per cent.; secondary, 43 per cent. The difference would appear to be due to the fact that many cases of primary amentia are not recognised till they go to school, and many of the secondary cases die in infancy. The recognition of mental defect depends on two things—information from the mother and the doctor's examination. The mother may give valuable information about the labour, about other children, or miscarriages, or about the family history. On examination, especially in severe cases, some abnormality of appearance or behaviour may be noticed, such as an abnormally small head or a too early closed fontanelle. The signs of an easily recognised disease such as mongolism, cretinism, or microcephaly may be present. Regarding behaviour, unnatural gestures and grimaces, such as rolling of the eyes, may betray mental defect. Lack of natural curiosity or abnormal emotional displays are morbid signs. A series of epileptiform attacks without apparent cause is probably an indication of the presence of mental defect. The persistent recurrence of attacks of petit mal is ominous, as it is often accompanied by arrest in the normal growth of the cranium. In these severe cases the prognosis is very grave. In dealing with the milder cases prolonged study of the child under various circumstances may be necessary before the extent of damage can be estimated and suitable training selected. The normally developing child first of all exhibits aimless movements of the limbs, which gradually become purposive as they become stronger. The instinctive movements, such as crying, swallowing, and sneezing, although they are purposive, unlike the random movements, are at first equally involuntary. In time they become clearly intentional, and the baby can be observed making efforts to turn his head and to reach objects. After the first three months he begins to balance his head. Later he struggles to sit up, turning his head to look about him, and practising convergence of the eyes. Still later, he exerts his will in learning to crawl, to stand, and at length to walk. In the same way the use of senses is gradually acquired and perfected. Another sign that the baby's brain is developing is the increasing gratification derived from the normal functions of the body. If for any reason these are interfered with, as from blindness or deafness, the growth of the intelligence is appreciably retarded. Later he learns to guide his movements more by the

help of his senses, and so adds to his knowledge of life. This leads by association of various observed events to the growth of memory. As some instincts and reflexes develop into voluntary actions, so others develop into emotions, and with the increase in number and strength of these the child's character is formed. Imitation of spoken words leads him to the beginning of speech, though understanding and application of words come later. Before he is a year old he understands much of what is said to him and uses a few words himself. Sometimes even after a few months he has some control over reflexes, and considerable control over bladder and bowel is reached in the second or third year. If this is not reached at 3½ there is some fault of development, health, or training. When he begins to sit up, controlled retention of saliva becomes necessary and in this he soon succeeds, except at such times as irritation from teeth or gums has temporarily increased its amount. Failure to show these normal signs in the absence of organic cause must be regarded as probably due to mental defect. "Bad habits," such as thumb-sucking, air-swallowing, rumination, &c., are of important significance. A habit of constantly protruding the tongue is often seen in mongols and cretins shortly after birth. These habits are generally just an exaggeration of the normal, and should be vigorously checked as soon as possible.

With regard to simple primary amentia, a number of cases now classified under this head will certainly with greater knowledge of them be distinguished and transferred to groups of their own. Consanguinity and neurotic heredity are important ætiological factors. Convulsions are common, occurring in 13 per cent. of the cases. The diagnosis is made more by exclusion than by positive findings. "Microcephalus," or the term which is often loosely used, is not a common disease, and in the true cases the lesion is a primary defect of the brain cells. The cranium is very small with a narrow receding forehead, a pointed vertex, and flat occiput. The fontanelle is closed at birth, or within 4 or 5 months—a symptom peculiar to this disease. The smallness of the head, which may escape notice at birth, becomes more noticeable as time goes on. There is no true paralysis, though exaggerated hypertonicity may suggest spastic diplegia. The features are usually well-formed and ears large and fairly normal, but the palate is unduly arched. The mental defect varies in direct proportion to the size of the head. Cerebral development proceeds very slowly. After the early years of apathy these children often become active, restless, inquisitive, and mischievous. Convulsions occur in more than one-third of the cases, but the cause is quite unknown. The brain resembles that of the higher apes, and the cells are imperfectly developed. The prognosis both as regards life and mental improvement is unfavourable. Mongolism was present in 25 per cent. of Dr. Thomson's cases under 5 years of age, and in 45 per cent. of those under 1 year. Many of them die in early infancy, mostly from catarrhal diseases. The protrusion of the tongue—a constant feature—would appear to be due to the shortness of the oral cavity rather than to undue size of the tongue. There are many signs of backwardness and imperfection in development. In disposition and character, although the infant may be rather dull at first, it soon becomes bright, cheerful, good-tempered, and affectionate. These children are especially apt at mimicry and, like cretins, cleanly and tidy in their habits. Of the congenital malformations, which are common, the commonest is congenital malformation of the heart, being present in 15·7 per cent. of the cases. The mongol has loss of powers of resistance to organismal infection, so that blepharitis is almost constant (over 90 per cent.). Their typical appearance makes the diagnosis easy. The prognosis is unfavourable both as regards life and mental improvement. Some perversion of endocrine development would seem to be an ætiological factor. A striking fact is that the average age of the mother was 37½ years. Thyroid treatment does not seem to be of much value. Sporadic cretins are much less common than mongols. The mental defects form a parallel with the well-known bodily defects, resulting from the faulty metabolism consequent on the absence of thyroid secretion. The diagnosis in doubtful cases can be rapidly settled by the striking improvement which follows on the administration of thyroid extract. Dr. Thomson holds that premature babies are much more liable than full-time infants to intracranial hæmorrhages. In diagnosis the history is most helpful, revealing a severe labour, prematurity, damage to the head apparent after birth, collapsed and asphyxiated condition of the child when born, or other suggestive information. The mental symptoms are mostly the same as those in other defective babies, although they appear worse in children with spastic muscles. The prognosis is more favourable than might be supposed, the restriction of movements often being overcome in time as a result of training.

In his concluding remarks Dr. Thomson laid stress on ante-natal work in the prevention of mental defect from birth injury.

## THE DETERMINATION OF ACUITY OF VISION.

THE determination of the acuity of vision by test-types has been practised for over 60 years with but slight modification of technique. Snellen's type, in common use, is based on the assumption that the normal eye is capable of distinguishing the shape of an object the linear dimensions of which subtend an angle of five minutes, while its component lines subtend an angle of one minute, and that the acuity of those eyes which need a larger visual angle may be expressed as a fraction of the normal in proportion to the size of the angle required. It has stood the test of time, and no one has suggested any alteration in principle, but in the details of application it is not to be expected that no improvement is possible. Prof. John Green and Prof. A. E. Ewing have devised new optotypes[1] for which they claim three advantages. The first is that by grading the size of the different letters by geometrical progression the new test is made more scientific. The question, however, arises Is the advantage to be gained from it sufficient to outweigh the inconvenience of having to translate all records made by the old nomenclature into the new for purposes of comparison? The second advantage claimed for the new types is that they simplify the routine and enlarge the scope of trustworthy clinical determinations, by providing varied sequences and arrangements of the test-letters and other characters. Single letters diminishing in size have undoubtedly been found of practical value by shortening the time required for initial tests and so minimising fatigue on the part of the patient. With young children and illiterates it is impossible to utilise the type ordinarily found in our out-patient rooms. Various simple figures and pictures have been devised at different times to meet the difficulty. The trident devised by Snellen assumes more patience and intelligence on the part of the patient than is often forthcoming. For Prof. Green's characters, on the other hand, it is claimed that the vision of squinting children of 3 or 4 years of age can be accurately measured. Again, for mutes and deaf-mutes a page of type is provided upon which they may indicate the character or letter seen upon the test-card. The third advantage claimed is that the differences in the legibility of the several test-letters—a difference of which all experienced with ordinary test-type are aware—is minimised by appropriate choice of letters and a conservative change in the typographical character. We can recommend these test-types as a valuable addition to the consulting room, though we do not think they are likely to supplant those in ordinary use.

[1] Optotypes Consisting of Test-letters and Picographs for Measuring the Acuteness of Vision. By John Green, M.D., Professor of Ophthalmology in St. Louis Medical College; and A. E. Ewing, M.D., Emeritus Professor of Ophthalmology in Washington University. With 35 engraved plates. London: Henry Kimpton. 1923. 25s.

## THE HEALTH OF HONG-KONG.

A REPORT on the health of the civilian population of Hong-Kong in 1922 is now available, and contains matter of interest. The population concerned is estimated at 662,200, of which total 15,200 are British and foreign civilians, the remainder being Chinese. The general death-rate was 25·16, for Chinese 25·47, and for non-Chinese civilians 20·46 per 1000. With regard to the chief prevalences of disease, plague heads the list with 1181 cases, as compared with 150 in the previous year; all of these cases but seven occurred among the Chinese population, and there was only one case among Europeans; 938 of the cases were notified in April, May, and June. Three species of the rat family are found in the colony, *Mus norvegicus* (the brown rat), *M. rattus*, and *M. musculus*, the respective percentages of the three forms being 41, 32, and 27. During the last nine years 85 per cent. of the rats examined and found to be infected with the plague organism were of the brown, and only 15 per cent. of the black species; the fleas known to be present are *Xenopsylla cheopis*, and *Ctenocephalus felis* and *canis*. Every precaution is taken to prevent rats from gaining access to buildings, such as provision of concrete for ground surfaces, and iron gratings for drains and ventilators, the use of kerosene emulsion for cleansing native dwellings every three months, and provision of covered metal dustbins; all buildings found to be infected are washed with kerosene emulsion, and clothing disinfected by steam heat. Rats probably enter the colony by means of shipping, especially in junks, of which "some four or five thousand would have to be dealt with"; a large organisation is therefore required.

Dr. J. T. C. Johnson, principal civil medical officer, who submits the report, discusses the question of the mode of transmission of leprosy. He considers that the infection is conveyed

"by some article of food, and the particular food which is in universal demand, wherever leprosy is found, is imperfectly cured or salted fish. At all times, and in almost every country where leprosy occurs, popular belief has associated it with the use of fish. Against this view it has been asserted that there are many races and peoples among whom leprosy prevails who do not eat fish because of religious scruples, or because they live in the interior of the country and are not able to get it. This has been abundantly refuted whenever the question has been thoroughly investigated. It has been asserted of India, Ceylon, Persia, Africa, but it appears to have been a statement based on preconceived opinion."

The Chinese themselves believe the disease to be contagious, and segregate such patients in leper villages. Dr. Johnson himself adopts the late Sir Jonathan Hutchinson's view, that leprosy is not contagious in the ordinary sense, and considers that the evidence for the fish hypothesis "seems to amount to a high degree of probability." He does not, however, refer to the possibility of infection through bites of insects, such as bugs and mosquitoes.

---

BY the death of Sir James Walter Mackay Simpson Bart., who died on March 16th in London, aged 41, the baronetcy conferred on his grandfather, the famous James Young Simpson, becomes extinct.

---

A SPECIAL meeting of Fellows will be held at the house of the Royal Society of Medicine on April 10th, at 5 P.M., to receive the medical officers of health who are visiting this country at the request of the League of Nations. Some 50 medical officers are expected, and Dr. Rajchman, medical director of the League of Nations Secretariat, will deliver a short account of the work of the League of Nations Health Organisation. The Minister of Health and Lord Parmoor, the British member of the Council of the League, will be present. The President of the Society, Sir William Hale-White, will preside. All members of the medical profession are invited to attend. Tea and coffee will be served at 4.30 P.M.

# Modern Technique in Treatment.

*A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.*

## LXIII.
## INCREASING DEAFNESS IN ELDERLY PEOPLE.

IN "Rabbi Ben Ezra" Browning's picture of old age is much too optimistic. On the other hand, the Preacher in the twelfth chapter of Ecclesiastes is unnecessarily gloomy, as when he writes "all the daughters of music shall be brought low." Deafness is, nevertheless, one of the most common, as well as one of the most distressing accompaniments in the later registers of life; and it is the physician's duty to find out if anything can be done to alleviate it.

### *Criteria of Senile Deafness.*

The first and most important step is to make quite sure that the patient is really suffering from senile deafness. In my experience the most common and most serious mistake is in making the assumption that because an elderly person is becoming deaf, the case is one of senile deafness. This mistake occurs the more frequently because the assumption has usually been made by the patient himself and by his friends. As a matter of fact, Eustachian and middle-ear catarrh are by no means uncommon in elderly people, and such cases may obtain very great relief by treatment.

The *age of onset* varies within comparatively wide limits. Senile deafness may begin as early as 60, or even before, or it may not make its appearance until 80. The onset is always gradual. A curious feature of the condition is the fact that the loss of hearing begins at the upper end of the musical scale, while the hearing for notes of low pitch is retained for a long time. Thus, frequently the first indication the patient has of his deafness is his inability to hear singing birds, especially the lark; whereas for the ordinary affairs of life, such as conversation, his hearing is as good as it ever was. As time goes on, however, the hearing power for the lower notes becomes affected and the deafness then becomes a serious trouble in the patient's life.

*Absence of Tinnitus and Vertigo.*—In uncomplicated cases of senile deafness the sufferer is almost always spared from the added burden of tinnitus or noises in the ears or head. This is a common and sometimes the most distressing symptom of ear disease, and it is perhaps remarkable that it is not an accompaniment of senile deafness. It must be remembered that tinnitus may occur in old people who are at the same time deaf. But here it will usually be found that the deafness is not of the uncomplicated senile type, but is associated with some other condition, such as the later stages of oto-sclerosis, which has been in existence long before the patient became old. It may also be due to arterial changes in the blood-vessels supplying the labyrinth, as in arteriosclerosis.

The sufferer from senile deafness is fortunately also spared, as a rule, from another common symptom of inner ear disease, vertigo. When this symptom is present the case is not one of uncomplicated senile deafness, but rather one of internal ear disease due to some constitutional condition such as arterio-sclerosis, or to some local change such as the deposition of calcareous salts in the vestibule or in the ampullæ of the semi-circular canals.

### *Rules for Differential Diagnosis.*

The diagnosis of senile deafness is not difficult in uncomplicated cases if the physician will take the trouble to follow a few simple rules. On inspection through the aural speculum the presence or absence of wax in the meatus, or of the existence of suppurative middle ear can be determined. It is not uncommon to find milk-white deposits of calcareous salts in the tympanic membrane of elderly

people; and, indeed, they are sometimes found in younger individuals. They cannot be looked upon, however, as being the cause of deafness, for they may be found in individuals whose hearing is not appreciably affected. Their occurrence should be remembered by the physician, because if the tympanic cavity be inflated too violently, either by means of the catheter or the air-douche, the sharp edges of the crystals may tear the membrane and give rise to a perforation. Fortunately, such perforations heal rapidly provided antiseptic fluids or applications are not introduced into the meatus. Inspection may sometimes reveal the presence of indrawing of the membrane. But too much reliance must not be placed upon the position of the handle of the malleus, since this varies within fairly wide limits in individuals possessed of normal hearing. The same is true of the degree of opacity of the membrane, for this also varies greatly in normal persons. As already stated, elderly people suffer in particular from a loss of hearing for notes of high pitch. This is tested for by means of Galton's whistle. The hearing power for the low notes is ascertained by the employment of deep-toned tuning-forks, as these are the only instruments which give notes sufficiently free from overtones to be reliable. If the case is one of uncomplicated senile deafness in the earlier stages, the physician will be surprised how comparatively well these low notes are heard. In the late stages of senile deafness the patient loses the hearing for all notes unless they are sounded loudly.

Testing the hearing by bone-conduction is frequently of use in establishing a diagnosis. In cases of middle-ear deafness the patient hears the sound of a tuning-fork when held with its stem against the mastoid process, as long or longer than normal individuals. Where the deafness is due to internal ear disease—e.g., senile deafness—the fork when held in the position described is heard for a shorter time than is the case in those possessed of normal hearing.

*Inflation of the Middle Ear.*—But far the most important of the tests is that which is concerned with the effect of inflation of the middle ear. Not only is this a most important diagnostic matter, but it is at the same time an indication for treatment, and, in some cases, the most important means of treatment. Inflation of the middle ear, therefore, must be performed methodically in all cases. The procedure is as follows. Before inflation the hearing distance for the watch, the whispered voice, and the conversation voice must be determined and noted. Inflation of the middle ear is then undertaken. This must be done by means of the Eustachian catheter and with one end of the auscultation tube in the external meatus of the patient and the other end in that of the examiner. On no account must the physician trust to the effects of the air-douche associated with the simultaneous swallowing of a mouthful of water. Nor must he rely on the statement of the patient that "he has felt the air go up to his ears." The clear, unmistakable rush of air into the middle ear must be heard through the auscultation tube by the examiner, who must not rest satisfied until this occurs. Having assured himself that the middle ear has thus been thoroughly inflated, the hearing distances for the watch, the whispered voice and the conversation voice are again tested by the examiner, and the results compared with those found before inflation. If a definite increase in the hearing distance is found, then there is no doubt that the deafness is due, in part at least, to middle-ear disease; though, of course, disease of the inner ear may also be present.

### *Indications for Treatment.*

The indications for treatment depend for the most part upon the result of inflation of the middle ear. If distinct improvement has occurred, then it will usually be found that some affection of the nasal cavities is present, such as chronic nasal catarrh, polypus, hypertrophy of the turbinated bodies, &c. These conditions must be treated by cauterising or by removal, as the case may be, but common-sense must be the physician's guide in this matter, and he must remember that the treatment must not be too heroic in old people. In mild cases simple treatment by sprays such as menthol in parolein (5 per cent. solution), &c., are sufficient. When the nasal condition is rectified so far as possible, the middle ear should be inflated by the catheter two or three times a week so long as improvement continues, which may be for several weeks. When no further improvement occurs the treatment should be stopped for the time being. It will frequently be found, however, that the dullness of hearing gradually returns. In such cases the inflations must be repeated every few months; the possession of their hearing means so much to them that elderly people are not only willing, but anxious, to have the treatment repeated. If, on the other hand, no improvement results from inflation of the middle ear the first time it is carried out, then nothing can be hoped for from that treatment by repetition. That is to say, if any benefit is to be derived from inflation it will be obvious from the first. In cases where no such improvement occurs the deafness is due to inner-ear disease, or less likely, to a middle-ear condition which cannot be remedied. In old people it will usually be due to true senile deafness. In these cases little can be hoped for by any line of treatment directed locally to the ear. The most that can be done is to try, by improving the general constitutional condition, to prevent the deafness from becoming worse, or at least to render its progress as slow as possible. If any local centres of septic infection are present, such as cystitis associated with enlarged prostate, these would naturally receive attention. Abundant hours of sleep should be advised, but these should be procured without resort to hypnotics, which usually have a bad effect upon the hearing.

Severe tinnitus is fortunately not common in the aged. When present, it is a most difficult condition to treat, and gives rise to great distress. The administration of bromides, at bed-time particularly, is quite permissible in these cases, because the patient would rather be free of the tinnitus even though the treatment involved some increase in the deafness. Furthermore, the tinnitus when severe is apt to interfere with sleep, and when this is the case a suitable hypnotic is desirable.

### *Artificial Aids.*

When relief is not procurable by the means described above, the question arises whether benefit may be obtained by the use of one of the artificial aids to hearing. In regard to this matter, experience shows that so long as the deafness is slight in degree the patient prefers to do without these instruments. With increase of the deafness, however, many sufferers find them of great benefit, and are willing to make use of them. The kind of instrument to be recommended varies according to the degree of deafness. In cases where the deafness is great, then it will be found that the most useful type of instrument are those devised upon the principle of the telephone or microphone—e.g., the acousticon or acoustique. The chief objection to these instruments is the jarring brassy tone which they impart to the voice. So much is this the case that some individuals refuse to make use of them under any circumstances. For these sufferers the simple old-fashioned ear-trumpet is often quite effective if the deafness is moderate in degree, but is of little use in cases of great deafness.

ALBERT A. GRAY,
Lecturer on Diseases of the Ear, Glasgow University.

---

Recent articles in this series are:—

XLVIII. Pyelitis, by Sir J. Thomson-Walker. XLIX. Prolapse, by Mr. Beckwith Whitehouse. L. Epistaxis, by Mr. J. Gay French. LI. Chronic Colitis, by Dr. Adolphe Abrahams. LII. Toothache, by Mr. A. T. Pitts. LIII. and LIV. The Acute Mental Case, by Dr. H. Yellowlees. LV. Acute Obstruction due to Growths of the Colon, by Mr. H. W. Wilson. LVI. Squint in Young Children, by Mr. T. Harrison Butler. LVII. Acute Septic Infection: Septicæmia, by Dr. A. E. Gow. LVIII. Surgical Treatment of Hæmatemesis, by Mr. A. J. Walton. LIX. and LX. Nephritis, by Prof. Hugh MacLean. LXI. Malaria in English Practice, by Dr. P. Manson-Bahr. LXII. Masturbation in Young Children, by Dr. H. C. Cameron.

# Special Articles.

## AN INVESTIGATION INTO THE PRESENT HEALTH OF GERMAN CHILDREN.

BY HELEN M. M. MACKAY, M.D., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN, QUEEN'S HOSPITAL FOR CHILDREN, AND INFANTS HOSPITAL, LONDON;
AND
M. D. MACKENZIE, M.D. LOND., D.P.H., D.T.M. & H.,
LATE SENIOR MEDICAL OFFICER, FRIENDS' RUSSIAN FAMINE RELIEF UNIT.

IN view of the contradictory reports concerning the health of children in Germany, it may be of interest to outline briefly the results of an investigation by the writers in Germany during February, 1924. Speaking broadly, it may be said that the conditions of child health in many German industrial towns bear numerous points of resemblance to those obtaining in Vienna in the post-war period, when for 20 months one of us was working in that city as a member of a unit sent out by the Medical Research Council and Lister Institute to investigate rickets in infants and young children. In the course of the present investigation the following towns were visited: Berlin, Leipzig, Munich, Mainz, Cologne, Essen and some of the smaller towns of the Ruhr, Breslau and the surrounding mining districts, Freiberg, Nuremburg, and Dresden.

Before describing the lines of inquiry, it is necessary to mention some of the difficulties of such an investigation. German economic and social conditions have changed rapidly, being successively affected by the privations of the later years of the war, by the partial famine conditions of 1919 and early 1920, by the period of recovery of 1921 and 1922, and finally by the disorganisation associated with the collapse of the mark in the autumn of 1923, followed by the present period of stabilisation. Each of these periods is reflected in the state of the children at varying ages in Germany to-day. Two of the principal difficulties in instituting any comparisons are: First, that statistics now obtainable in Germany have necessarily become imperfect and are not up to date; and secondly, that few of the statistics to which we have had access in this country are strictly comparable. Racial differences, the varying conditions in different parts of Germany, and among different classes of people, together with the different standards that exist in Germany, as compared with this country, in such matters as adequate clothing, &c., further obscure the real position.

The following were the lines on which the inquiry was conducted: (1) social investigation; (2) investigation of food consumption; (3) examination of the child; (4) evidence of malnutrition from disease incidence; and (5) general statistics.

*Social Investigation.*—This was largely outside our scope, but it is worth mentioning that the unemployment dole in Germany is about 7 or 8 Renten Marks a week for a man with a family, equivalent in buying power to a little over 7*s.* or 8*s.*, and the number of unemployed and partially employed is greater than in this country. It is obvious that this amount is insufficient for the maintenance of health, although one must remember that rents are often negligible.

*Investigation of Food Consumption.*—The most important factor in connexion with the food of small children is that milk and sugar have risen to twice their pre-war price, whereas flour is at about pre-war price. There is consequently a growing tendency to substitute flour and water for milk in their dietary. Moreover, owing presumably to the shortage of oil-cake, it was necessary during the war to reduce the official standard for butter fat in milk from 3 per cent. to 2·7 per cent., which still obtains. The milk production of Germany has dropped greatly, and is estimated at about 30 per cent. of the pre-war quantity. A still further shortage has resulted from the interference with the transport of milk from the country to the towns. This applies particularly to the Ruhr district, which in pre-war days imported a large proportion of its milk. Consequently, in many towns there is an absolute shortage of sufficient milk for the infants and children, whereas in others the milk-supply for these groups is sufficient, but the price is prohibitive, excepting for that supplied free or at reduced price for the use of infants, and in most districts for children up to about 2 years of age. Many children get sufficient calories, but suffer from improper balance in the diet. At the present time the brunt of the milk shortage appears to fall on children from 1 to 5; those under 1 year are, in general, receiving sufficient milk. Inquiry as to the food consumption in the preceding 24 hours is apt to be unsatisfactory, though by questioning large numbers valuable information may be obtained. Mothers tend either to exaggerate the want, or, in the majority of cases, are ashamed to say how little food they have had; and in the case of a child the tendency to repeat another child's statement or to say what he thinks is expected of him, is well known. Generally speaking, in every school that was visited, children in the higher classes were questioned, and of the hundreds of children examined the majority had meat only once a week, and margarine or other fat either for breakfast or tea. In some towns few of the children questioned had any form of fat on their bread. The midday meal generally consisted of black bread and vegetables, and in the poorest schools it was usual to find one or two children in each class who had had no food before leaving home in the morning.

*Examination of the Child.*—In order to examine unselected samples of the poorer child population, infant welfare centres, kindergartens, and schools were inspected in the poorest districts of each town visited, and the condition of the children with regard to physique, colour, amount of subcutaneous fat, evidence of tiredness—e.g., bad posture and dark rings under the eyes—and degree of activity were noted. From these observations the conclusion was reached that compared with British children, as known to us—i.e., in London and north country industrial towns—a low standard of health is more general in the towns we visited, and is to be found widely in children of all social classes—middle-class children are to be found in the poorest schools. We found no evidence of acute starvation in any group of children, except those of Breslau and the surrounding district. The condition of the children varies greatly from town to town—more stunting of growth was observed in the school-children of the Breslau and Essen districts than among any others. In some towns, such as Mainz, the overcrowding due to the large additional population caused by the occupation is probably a factor of great importance in producing the almost universal appearance of tiredness in the school-children.

Prof. Rudolf Martin, of Munich Anthropological Institute, has figures of great value concerning the physique of school-children, and has been able to institute a comparison between the heights and weights of Munich children in pre-war days, in 1921 and in 1923. Together with the heights and weights he has a large series of other measurements, and had hoped year by year to obtain data which would increase the meagre amount of knowledge now existing concerning the ultimate physique of children who had suffered from privation at varying ages. He excludes all children showing evidence of disease, for instance, rickets, so that no comparison is possible between his figures and those for children in English towns. His pre-war standard is taken from figures for about 12,000 children in Freiburg-im-Breisgau, Apolda, and Frankfurt-am-Main, and from comparison with pre-war Munich figures he has reason to believe that these figures also represent the Munich standard. His own measurements at the Anthropological Institute comprise several thousand children. Com-

pared to the pre-war standard, the 1921 standard in Munich was approximately 2–6 cm. less in height and 1–4¾ kilo. less in weight at each year of school age. Since there seems little doubt that the amount and severity of rickets have increased, the deterioration is greater than is shown by figures from which the diseased have been intentionally excluded. For 1923, on account of the poverty of the institute, Prof. Martin has only been able to obtain figures for children aged 6½–8½ years. The 6½–7½ year-old children show no significant change, but those aged 8–8½ years show a definitely poorer physique in 1923 than in 1921, the retrogression in 8½ year-old boys

FIG. 1.

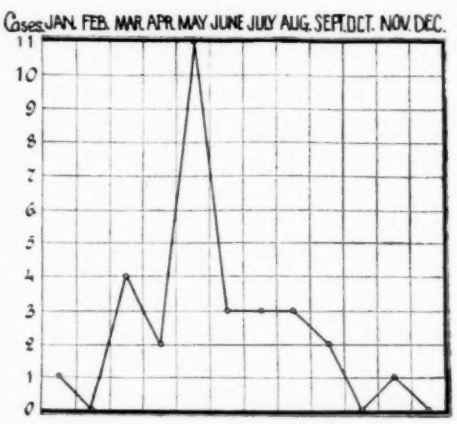
A case of hunger œdema following pure carbohydrate diet, January, 1924. The child is shown before and after treatment; the photographs were taken in the Breslau University Kinderklinik, and are reproduced by permission of Prof. Stolte.

being 1 cm. in height and 1·7 kilo. in weight, and for 8½ year-old girls 2·1 cm. and 0·9 kilo. respectively. Figures from Stuttgart and Mannheim show that in those towns, unlike Munich, the average heights and weights of school-children had risen by 1921–22 to approximately the pre-war standard, but no figures later than 1922 are available. An improvement from year to year between 1918 and 1921 can also be seen in the height and weight curves of Leipzig school-children. Prof. Martin's work would indicate a reversal of this process of improvement between 1921 and 1923, which is in accordance with the general impressions of nearly all medical authorities. On the other hand, the height and weight curves of the Leipzig school-children of 1918, 1919, 1920, and 1921 were, for almost all ages, better than the corresponding curves of Glasgow school-children for 1922–23. It must be remembered, however, that possible racial differences prevent any final conclusions being drawn from such figures. The so-called Rohrer index, $\frac{(\text{weight} \times 100)}{\text{height}^3}$, has been extensively used in Germany for purposes of comparing the standard of physical development attained by the children of different areas, and appears to be of value for mass work, but no similar figures exist in this country. Such weight-height indices seem of little use in estimating the condition of the individual.

*Evidence of Malnutrition from Disease Incidence.*

(*a*) *Nutritional Diseases.*—During the whole period of our stay in Germany only two cases of acute starvation were seen, both in the Breslau district. In this region a certain number of cases of hunger œdema in children of school age and under were admitted to hospital during the last few months, and similar cases were reported in Cologne (see photographs). No cases of hunger osteomalacia in adults were seen, though there were reports of a considerable number of such cases during the blockade period. Nearly all medical authorities are agreed that, as happened in Vienna, there has been a marked increase in the amount of rickets as compared with the pre-war period. This condition is, of course, due to defective hygienic as well as dietetic conditions, and therefore is to some extent an index of increased poverty. On account of the varying standards of diagnosis, general figures are of little value, but such figures as the following seem to indicate a very definite increase. In Schöneberg, a section of Berlin, 20·7 per cent. of all 6-year old children attending school now show evidence of rickets, according to the report of the school medical officer, whereas the corresponding figure for 1913 was 5·2 per cent. There appears to have been in some districts an increase of rickets in the present winter as compared with the winters of 1920–21 to 1922–23. For example, in the infant and child welfare centre associated with Prof. Rott of Berlin, 20 per cent. of the total children examined had evidence of rickets in the last quarter of 1922, and in the corresponding quarter of 1923 this figure rose to 40 per cent. Dr. Wendenburg of Gelsenkirchen in the Ruhr area, finds in breast-fed infants aged 3 to 5 months attending the welfare centres of the town, nearly 25 per cent. with craniotabes in the present winter. During the previous two winters, scarcely any craniotabes was to be found in such infants, but during the winter of 1919–20, when privation was severe, 50 per cent. had craniotabes. Keratomalacia is increasing in Germany after, we understand, an interval of comparative freedom since the blockade. Prof. Stolte, of Breslau University Kinderklinik, informed us that from the years 1912 to 1921 only 10 cases of this disease had been seen at his clinics, whereas 30 cases occurred in 1922, showing the usual increase in the spring months (see curve, Fig. 2). In Waldenburg (population

FIG. 2.




Keratomalacia—a curve showing the seasonal distribution of 30 cases treated at the Breslau University Kinderklinik, 1922. Reproduced from the paper by Dr. Richard Galka, Monatschr. für Kinderheilkunde, XXVI.

40,000) there have been 30 cases within the last few months, and cases have occurred in infants fed entirely at the breast, which presumably may be taken to indicate an extreme fat deficiency in the diet of the mothers. Cases are also reported during the past year in the University Kinderkliniks of Berlin and Leipzig by Profs. Czerny and Bessau. As was the case in Austria, there appears to have been an increase in infantile scurvy since the pre-war period, which is probably to be associated with the consumption of stale milk, and a few cases have occurred in breast-fed infants whose mothers were presumably also suffering from the disease. It may be of interest to compare the very heavy incidence of scurvy in Russia in young children in the year following that of the famine.

*Diseases due to Lessened Resistance.*

It is widely held that faulty nutrition has led to greatly diminished powers of resistance in children. No support for such a theory can, however, be found in the German statistics of deaths from scarlet fever, measles, diphtheria, or whooping-cough, all of which have shown a steady decline during the last decade. The death-rate from tuberculosis was roughly doubled in 1919 as compared with 1914, but fell steadily in 1920 and 1921, and showed a slight increase in 1923. For the third quarter of 1923 in the 46 largest towns the rate was 14·7 per 10,000 per annum. The London death-rate for the whole of 1922 was 12·8.

It is known, on the other hand, that an increase of tuberculosis is not immediately apparent in the death-rate, and there is a general consensus of medical opinion in Germany that tuberculosis has increased, particularly among children. It is quite impossible to get any reliable general statistics, but figures such as the following are suggestive: In Freiburg, in 1914, out of a total of 3178 students in the University, 10 were diagnosed as pulmonary tuberculosis; in 1922, out of a total of 3667 students, 93 cases of phthisis were diagnosed. Prof. Ranke, the well-known authority on tuberculosis, informed us that in 1922 of 4816 new cases attending clinics under his charge, 17 per cent. were suffering from open tuberculosis. In 1923, of 3209 new cases, 31 per cent. had open tuberculosis. In 1922, among school-children in Schöneberg, 0·4 per cent. were diagnosed as cases of tuberculosis of the lungs, as against 0·1 per cent. in 1913. It may be of interest to compare the figures for London County Council schools in 1923. Owing to the differing standards of clinical diagnosis no final conclusions can be drawn from them, although the difference is very marked—among 242,145 L.C.C. school-children 89 were diagnosed as definite cases of lung tuberculosis (i.e., 0·037 per cent., as against 0·4 per cent.).

In Berlin, out of 1000 infants 10 per cent. recently gave a positive tuberculin reaction, whereas formerly this figure was only about 3 per cent. Prof. Mayer of Munich gives almost exactly similar figures for his home for infants of 100 beds; the pre-war figure was 2–3 per cent., the present figure 10 per cent. Figures of increased attendances of cases of tuberculosis at individual institutions are apt to be misleading, as out of a total of 40,000 beds in tuberculosis hospitals and sanatoria 4100 have been closed on account of want of funds—therefore, no such figures are included in this paper.

We did not hear of any cases of cancrum oris. This is in marked contrast to the large amount of this disease seen in Russia during the famine.

*Statistics.*

The only general statistics of any value (apart from those already mentioned) are the general death-rate and the infantile mortality-rate. The death-rate for the 46 largest towns in Germany was lower in almost every month in 1923 than in 1922. The death-rate for the first quarter in 1923 was at the rate of 17·3 per 1000 per annum, and for the corresponding period in 1913 was 16·8 per 1000. The infantile mortality-rate has dropped considerably since before the war, though it has for years been higher than it is in this country. In the 46 towns previously mentioned there is an increase in the third quarter of 1923, as compared with the third quarter of 1922 (114 to 138). No later figures are available. In the last quarter of 1923 the infantile mortality-rate per 1000 in individual towns was: London, 67; Berlin, 124; Breslau, 148; Cologne, 106; Dresden, 93; Frankfurt, 71; Munich, 117.

The improvement in the infantile death-rate since pre-war days is probably brought about primarily by increased breast feeding, due partly to poverty and the giving of a small bonus for breast feeding and partly to the teaching of the welfare centres. In Munich, for instance, the amount of breast feeding at the beginning of the century was estimated at 25 per cent. and is now about 70 per cent., the death-rate in breast-fed babies between 1916 and 1919 was 103, and in artificially fed infants 219. The fact that the general infantile death-rate for the third quarter of 1923 showed no great rise is conclusive evidence that, up to that time, no severe privation had fallen on this section of the community.

*Conclusions.*

Throughout the investigation one of the greatest difficulties was that of separating the effects of previous periods of under-nourishment from malnutrition due to present conditions. As a group the infants appear to suffer least at the present time in Germany, and the weight at birth appears to be unaffected by the malnutrition of the mothers—a statement true also in Vienna throughout the post-war period. The group of children most affected are those from 2 to 5 years. This is well shown in the following table, indicating the general falling-off in weight during successive years of a group of children attending the welfare centres in Neukölln, a district of Berlin:—

| Years. | Percentage of all children under weight. | Normal weight (per cent.). | Over weight (per cent.). |
|---|---|---|---|
| 1–2 | 41 | 45 | 14 |
| 3–4 | 70 | 23 | 7 |
| 4–5 | 75 | 16 | 9 |
| 5–6 | 86·5 | 13 | 0·5 |

Generally speaking, boys appear to be less well-nourished and to suffer more in health than girls of the same age. The same held true in Austria during the time of privation, and is possibly to be attributed to the lesser activity of the girls. As compared with the British working-class standard, we considered a low standard of health more general, but the clothing of the children, except in two towns visited, was almost uniformly good. The footgear in many cases was, however, bad.

There is undoubtedly a definite deterioration in the physique of German children aged 2 to 14 since the beginning of the war. It is universally believed by German medical men that physique improved during the years 1921–22, and this is borne out by the figures available of the weights and heights of school-children, but it is probable that considerable sections of the child population are again deteriorating. More is at present being done to supplement the diet of school-children than of those under school age. There is no evidence of acute starvation of any extent among children in Germany, but a large section of those between 1 and 5 are suffering from an insufficient or ill-balanced diet.

In conclusion, we should like to express our indebtedness to the many members of the medical profession in Germany, and to those concerned in the care of children who freely put at our disposal all the information and facilities for which we asked, as without their constant help this investigation could not possibly have been carried out.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee 29 cases were considered and £441 10s. voted to 28 applicants. The following is a summary of the three new cases relieved.

L.M.S.S.A., age 57, who practised in Essex. Since 1921 his ill-health required the constant attention of his wife who on this account had to give up a small business. Their total income now amounts to about 25*s.* per week. They live in a small bungalow which they purchased by money obtained on loan and a mortgage, the interest of which is £26 per annum and the rates £8 per annum. Voted £26 in 12 monthly instalments and a Special Grant of £5.

Daughter, age 66, of a surgeon who practised in Devon and died in 1870. Applicant's capital was expended in supporting a sister who was ill with consumption for four years before she died. She is now left with an annual income of £38, and gifts from friends amount to about £20, and she lives with a brother who finds her a shelter. Voted £10 in two instalments.

Widow, age 73, of F.R.C.P. Edin. who was an army doctor and later practised in Hampshire. Her husband died without making any provision. Applicant lost her income through a fraudulent trustee. Both her children are in financial difficulties and are unable to help in any way. In consequence of ill-health applicant is unable to earn. Voted £18 in 12 monthly instalments.

Subscriptions may be sent to the hon. treasurer, Sir Charters Symonds, K.B.E., C.B., M.S., at 11, Chandos-street Cavendish-square, London, W. 1.

# THE DIFFERENTIAL DIAGNOSIS AND THE PREVENTION OF SMALL-POX.

BY A. F. CAMERON, M.D. EDIN., D.P.H. CAMB.,
MEDICAL SUPERINTENDENT OF RIVER HOSPITALS AND AMBULANCE SERVICE, METROPOLITAN ASYLUMS BOARD.

(*Concluded from p. 568.*)

## THE PREVENTION OF SMALL-POX.

As a preface to this part of the subject I have to say that I am not concerned with the defence of the prophylactic value of vaccinia. The inoculation of vaccinia, if it is efficient and sufficiently recent, prevents small-pox. It is our only prophylactic.

During a recent investigation of an outbreak of the disease, I made a note of the following circumstances in connexion with a family of nine children. The mother stated that eight of her children had been attacked by the disease, and that none of the eight had been vaccinated. Every one of the eight showed evidence of a recent eruption which was consistent with the mother's statement, and with small-pox. The mother also stated that the ninth child had not been attacked by the disease, and that this child had been vaccinated. She was 11 years of age. She had no signs of having had an eruption and showed four vaccination scars, well pitted and of an area exceeding half an inch. I have quoted this case, not because the circumstances are in any way remarkable, but simply for the purpose of illustrating what is really meant by prevention of small-pox. If the other eight children had been in the same condition as the ninth the disease would not have appeared in this family. It would have been prevented. And so with other families, and so with the whole of our population.

We cannot entirely prevent the importation of the infection, nor, I believe, can we prevent the occurrence of a number of secondary cases among the people. But we can prepare ourselves to meet any importation of the disease, and we can so narrowly restrict the number of secondary cases that we shall be free from the constant menace of endemic small-pox and the ever-present risk of wide-spread epidemics of the disease. So for practical purposes one may say that the prevention of small-pox means the removal of the menace of small-pox, and the only means by which we can remove this menace is by increasing the immunity of the people. Prevention of small-pox therefore implies that the protective inoculation of vaccinia must anticipate the advent of the infection, and if we postpone the use of vaccination until the disease has appeared among the people, we are neglecting prevention and pretending to regard the presence of small-pox with all the social and commercial disturbances which accompany it, as an inevitable evil, although we are quite well aware that it is the most preventable of the infectious diseases.

### *Postponement of Use of Vaccinia till Small-pox has Appeared.*

There are some among us who affirm their confidence in the prophylactic value of vaccinia, and yet do not hesitate to express the opinion, and to present the opinion as a guide for public policy, that we may safely neglect to employ the full power of prophylaxis, that the use of vaccinia may be safely postponed until the disease has appeared. The reason stated to underlie this opinion is that small-pox in the vaccinated but incompletely protected individual is apt to cause difficulty in diagnosis, and that missed cases therefore occur which spread the infection. I am not inclined to believe that this is a very frequent cause of missed cases. A neglect to exclude small-pox in course of diagnosis is certainly a common source of error. Even if difficulty arises because vaccinia has partly lost its efficacy through lapse of time or inefficient administration, that is no reason for advocating the less complete use of the prophylactic. It is a cogent reason for advocating the reinforcement of immunity. Recent experience in this country also shows that mild small-pox in the unvaccinated may give rise to similar difficulty.

The neglect of prophylaxis in this country and the result of that neglect are emphasised by Sir George Newman in his last report on the state of the public health. Under the heading The Present Situation, the Chief Medical Officer of the Ministry of Health states that the vaccination of infants has declined to 38 per cent., and goes on to say: "The administration of our vaccination laws may be open to criticism, and steps have been taken in the present year further to improve this administration. It is obvious that the vaccination laws themselves are in need of amendment."

For the purpose of debate I desire to make a few suggestions in the direction of strengthening the law and so enabling it more nearly to attain its object, the prevention of small-pox.

There is a great necessity for education of the people in the simple facts which underlie the production of immunity. The energy displayed in these days by sections of the public press in harrying small-pox nests is very admirable in intention, but is often misdirected on account of want of knowledge or appreciation of the true meaning and scope of protective inoculation. In an article dealing with the neglect of vaccination in a district where small-pox was rife the following sentence appeared: "The ordinary sane citizen, by the way, has a conscientious objection to being put in peril of a loathsome disease by the selfish obstinacy of a gang of fanatical fools." The "ordinary sane citizen" will protect himself. The prevention of small-pox is impeded by illogical thought and statement of this sort, and appeals founded on one's duty to one's neighbour, such as the advice that vaccination is necessary "not only for his own safety but for that of others," are not likely to be of much value. I would suggest that the public health authority should replace the board of guardians in executive control of small-pox prevention, and that it should be part of the duty of that authority to undertake the education of the people. The lines which this education should take and the methods of carrying it out will suggest themselves.

### *Compulsion in its Relation to Vaccinia and Small-pox.*

The making of a law entails the prescription of penalties for its infringement. The removal of the penalty destroys the effective administration of the law. Within the last two decades, the removal of the penalty for the neglect of the law that infants must be vaccinated has gone far towards making vaccination law ineffective in this country. It is possible to re-enact the law. But would the re-enactment, taking into account the massive opposition which would be raised, justify itself by enabling us to attain our object, the prevention of small-pox? At the present time protection is afforded to 38 per cent. of children. There must be, and in fact there are, large sections of the community where the percentage of protection is much lower. One is not very hopeful of the result of an attempt to enforce the vaccination of infants in these districts. Let us consider the conditions which have to be met. Compulsion in any form is repugnant to us. To be tolerated it must make a valid appeal to reason. Having for four years fought against a system of government of which the basis and fabric were compulsion, it is not difficult for us to understand the attitude of the parent towards the compulsory vaccination of infants and children of tender age when we realise that he may never have heard of a case of small-pox or of fatal small-pox in his neighbourhood, and therefore has no experience of the results which may follow an attack. For example, suppose that a man were to receive at the present time a Government form instructing him that he is required to arrange for an efficient shelter for his children in the event of an air raid, that he will be penalised if he fails to do so within a stated period, and that he must supply documentary evidence that he has carried out the order. One can imagine his attitude. Compul-

sory vaccination of infants, in the absence of small-pox or of fatal or disfiguring small-pox, makes the same sort of appeal. It is a bureaucratic order which may lose its appeal to reason on account of existing conditions and of ignorance. Again, from the parent's point of view, the immediate and local effects of the inoculation are apt to be detrimental to the present well-being of the infant. In spite of our assurance that these effects are strictly transient, they appeal to the parental feeling and become especially undesirable when they cause disturbance of the father's or mother's rest. The appearance of signs of constitutional feebleness or disease is apt to coincide with, or to follow soon after, the transient effects of the inoculation. One meets at times with families in whom, for reasons such as these, the eldest child is the only one who has been protected.

*Responsibility of the Parent.*

To return to the illustration. Let us suppose that the father is informed that it is his duty to arrange for an efficient shelter for his children in the event of an air raid, because he is the responsible protector of his family, and that he will be penalised in the event of injury to any of his children in an air raid if he has neglected to take the precaution advised. Such an order would, I believe, appeal to his reason because he would recognise his responsibility. Prosecution now follows any gross neglect of children which causes them to suffer in their health or well-being. But it is necessary to prove the suffering and the neglect before a penalty is imposed. Why should the parent or guardian whose child contracts small-pox not be compelled to justify his action in a court of law if he has neglected to afford his child the only protection against the disease? or if he has neglected to take his precautions until he is too late to ensure complete protection? Why should he not be liable to serious indictment if neglect is proved and small-pox has been the direct or a contributory cause of his child's death? In a manifesto issued before the recent election, it is stated: "When Labour rules, it will take care that little children shall not needlessly die." The death of a child from small-pox is the most needless of deaths because the disease can certainly be prevented. I confess that I should like to see the penalty attached, not to the neglect of the vaccination of infants, but to the evil result which may follow that neglect. It is more logical and therefore easier to deal with actual than with potential crime.

Even if the attempt to reinstate the compulsory vaccination of infants was completely successful, this measure is not sufficient in itself to enable us to attain our object, the prevention of small-pox. The immunity produced by the operation gradually, and in most cases completely, disappears and must be reproduced. The most important potential carrier of small-pox is the adult and, I believe, particularly the male adult, who daily leaves and returns to the family circle. The majority of the mothers and infants and children under school age are naturally screened from attack by the restriction of movement associated with family life. The unprotected or partially protected father and older children who go to work bring the disease inside the screen. During the war a large proportion of these potential carriers of small-pox were rendered insusceptible by vaccination and revaccination. But we are now beginning to reap the fruits of our legislative destruction of the protection of children against small-pox, because as time goes on more and more of these unprotected children go out to work and join the ranks of potential carriers of the disease, and as a result small-pox appears to be gradually but surely re-establishing its former position in this country as an endemic disease, and a disease of childhood and early adult life.

*Suggested Method of Ensuring Vaccination of Children.*

I would suggest (*a*) that the first offer of protection should be made by the Registrar of Births and by domiciliary visit of the public vaccinator; (*b*) that examination and record of the vaccinal condition of the school-children should be part of the duty of the school medical service, and the information thus obtained made available for the use of the vaccination authority; (*c*) that protection should again be offered to the unprotected when the child enters school; (*d*) that protection in the case of unvaccinated children should be compulsory at the seventh year of age, and that exemption of this class should be granted only on production of a medical certificate that the child is physically unfit for inoculation; (*e*) that vaccination and revaccination of those previously protected should be enforced under penalty for refusal during the last year of school life under the same condition for exemption, and that insusceptibility at this period should not be certified until three unsuccessful attempts have been made to obtain a reaction.

If we genuinely desire to rid ourselves of the menace of small-pox, the necessity for compulsory protection at some period of life must be acknowledged. There are good reasons for removing compulsion from the period of infancy, and for using it at the later periods. Parental objections have lost much of their power when the child has reached the seventh year, and a rigid compulsion at the time when the youth is about to leave the security of family life, and if incompletely protected to become a potential carrier of small-pox, has an obvious preventive value. After school age compulsion should be applied in the case of all immigrants, and of all who have been in contact with the disease.

If our vaccination laws were so framed as to make a greater appeal to reason than they do now, and if protection were strictly enforced at the later ages, I do not say that small-pox would disappear from the country, but I believe that the percentage of children protected in infancy and early childhood would increase and that in the course of a few years we might expect to be free from the menace of endemic small-pox, and from the risk of widespread epidemic disease which now constantly threatens us.

*Prevention of Spread of Disease is not Prevention of Disease.*

The method employed in this country in dealing with small-pox is not prevention. It may be called the preventive treatment of small-pox. The method finds its legal sanction in the sections of the Public Health law which deal with infectious diseases. These sections are sometimes described as preventive, but they do not merit the title. They provide, it is true, for the efficient notification and isolation of cases of small-pox, for the destruction of infection, and to some extent for the supervision of those who have been in contact with the disease. But they become operative only after invasion by the disease has occurred, and their object is not the prevention of disease but only the prevention of the spread of disease. Our Public Health law has no dealings with prophylaxis, and the assumption which underlies its provisions is that these provisions are in themselves sufficient to attain their object—namely, the prevention of an epidemic of small-pox in a community which is completely unprotected against the disease. Until quite recent times our method of preventive treatment has met with considerable success in controlling the spread of the infection. The machinery of the method, notification, isolation, and disinfection, has been gradually tuned until it has apparently reached the greatest perfection of which it is capable. The measure of success which has been attained has brought with it the disadvantage that the observation and study of the disease have become more and more nearly the perquisite of a few members of our profession. Perhaps also as a result of the measure of success which has been attained and maintained until recent times, an unfortunate tendency seems to have arisen to express a complacent but unjustifiable satisfaction with the method, a tendency to regard vaccination and to speak of it as if it were only one means among others of preventing small-pox and of keeping the disease under effective control, and not really the only

means which is of any permanent value. It is, I believe, quite certain that our administrative method has attained its measure of success simply because it has enjoyed the essential but unobtrusive support of prophylactic vaccination, and if one may judge from present experience in several parts of the provinces the inability of the provisions of the Public Health law to control the movements of small-pox, when this essential support is undermined, is being very clearly demonstrated. One may assume that vaccination is being used in these districts to the fullest extent to which persuasion can carry it, but it has to be acknowledged that there is no provision in the existing law for the use of vaccinia in the control of an outbreak of small-pox. It is reasonable to suggest that the measure which is the only really effective means by which the law can attain its object, the prevention of epidemic small-pox, should receive legal sanction, and be embodied in the law in order that it shall be the duty of the public health authority to provide for and enforce vaccination on all who have been, in the opinion of the medical officer of health, in contact with the disease, and that a penalty shall fall on any authority or "contact" who knowingly evades the obligation or causes unnecessary delay in carrying it out.

However keenly we tune the machinery of our method, the method will at its best remain palliative. The neglect of prophylaxis and the freedom of choice given to the "contact" and to the vaccination authority, will maintain our risk of epidemic spread of the disease, and the enormous expenditure required in preparation to meet that risk, and so long as we continue to neglect prophylaxis, no improvement in administrative procedure can lighten the excessive responsibility now placed on the practitioner who must retain the supremely important duty of setting the machinery in motion. The personal question, "Can this patient's condition, at present obscure, be the result of the infection of small-pox?" has become under existing conditions in this country more vitally important than it has been in the past, and the failure to ask it, or delay in replying to it, is much more apt now than it has ever been in our time to give the disease the opportunity for which it is always ready.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

### *The Ultimate Sequelæ of Infantile Cardiac Disease.*

AT a recent meeting of the College of Viennese Doctors, which takes place weekly for the discussion of pathological problems, Docent Dr. Moll and Dr. Hecht discussed the late results of heart disease acquired in childhood. This chapter of pathology has hitherto received but scant attention from students. The Vienna children's clinic has instituted a regular control of cases that have been under treatment for a prolonged period, and these patients are invited to present themselves every other year for re-examination. Recently 42 former patients who had been treated for rheumatic endocarditis responded to the invitation. In 25 per cent. no trace of the affection was found, whilst 75 per cent. had signs of the disease. Cases which had left the hospital with symptoms of mitral incompetence now showed signs of mitral stenosis in addition. Furthermore, 21 cases of chorea minor or major, with concomitant valvular disease, came up for re-inspection, and in them the heart affection was still evident. Of nine cases of diphtheria, who suffered from cardiac trouble at the time of their dismissal from hospital, in three the heart proved normal on examination, whilst of six scarlet fever cases the heart was affected in two instances only, the other four being normal. All these control cases were seen seven to eight years after having left the clinic. In the opinion of the referees it is of importance in the after treatment to keep the patient in bed until the pulse-rate remains below 100, even after moderate exertion. As regards arrhythmia in children, in the majority of cases this symptom is due to respiratory influences unless an organic cause is present. The differential diagnosis of the former condition may be made from the fact that inspiration causes an increase of the heart beats, and expiration a decrease. Pathological arrhythmia is more frequent at the age of puberty. After infectious diseases, and also in cases of chronic constipation, one frequently finds in children a change in the pulse-rate, mostly of the type of extrasystole. A continuous arrhythmia (frequent in adults at the late stages of cardiac disease) is hardly ever encountered in children. As a rule all these cases clear up without delay. A diagnosis of organic cardiac disease in a child is not justified after a single examination, as other factors which emerge only after repeated examinations at varying intervals, such as accidental murmurs and variations of inspiration type, must be taken into consideration.

### *The Pathology of Goitre in Adolescents.*

Dr. Gold, aided by Dr. Orator, read before the Medical Society of Vienna an instructive paper on the pathology of goitre in juveniles, based chiefly on anatomical investigations in 555 cases within the last two and a half years. Up to the seventeenth year the diffuse colloid goitre is more prevalent than the diffuse hypertrophic type. In older juveniles (19–21) the quiescent diffuse or the nodular type is more frequent. Girls reach the final stage of any particular type of goitre a few years earlier than boys, which seems to point to an endogenous factor (puberty?) in the genesis of the disease. Menstruation plays an important part in the rate and type of thyroid enlargement. Treatment by iodine seems to favour the formation of colloid goitre, as has been noted also in Eiselsberg's clinic. The anatomical structure of the juvenile goitre is a typical diffuse parenchymatous hypertrophy, with distinct formation of lobuli. Colloid material is present in small quantity only if no iodine treatment has been given. The iodine content of the examined thyroid gland is normal as a rule, the pharmacodynamic function is mostly normal or subnormal. Whilst in the juvenile goitre the number of follicles in the gland are increased and the epithelium is of one layer only, in the Basedow's (Graves's) disease the follicles are enlarged, but not increased in number, and the epithelium consists of several layers. Juvenile goitre does not represent a persistence of a previous stage of development, but is a compensatory hypertrophy due to previous hypofunction, and iodine treatment is justified. In cases of hypoplasia iodothyrin is required. Operation is advisable only when mechanical interference—e.g., pressure symptoms—becomes evident.

### *Venereal Diseases amongst Children under Welfare Care.*

In a recent report of the Board of Guardians to the Municipal Council for Health, Prof. Tandler pointed out that venereal diseases were by no means rare in the children under the care of the Municipal Board for Juveniles. This office was organised some two or three years ago to look after the interests of children living in Vienna, from infancy up to the age of 18 years (apprentices and minors in industrial enterprises). School-children (aged 6 to 14), however, form the chief care of the board, including all orphans, waifs and strays, and other neglected children. In a central children's institute ("Central-Kinderheim") are housed all cases which cannot be looked after by friends or foster-parents, as well as weakly children not requiring hospital accommodation. Among the inmates of the institute no less than 150 have been found to be suffering from some form or another of venereal disease; acute or chronic gonorrhœal infection both in girls and boys is prevalent, but congenital syphilis is also fairly frequently found, whilst three cases of primary syphilis transmitted by careless friends or parents have occurred

only quite recently. A special pavilion, capable of accommodating 250 cases, will be devoted to the care of these children. This number will soon be reached, if the appropriate cases from the other institutes are also handed over to the venereal pavilion. It is intended to keep the children who are suffering from that intractable form of chronic gonorrhœal infection well known to all practitioners as a crux medicorum (and this condition is mainly found in girls of 3 to 12 years of age) separated from the other inmates for a prolonged period. A number of teachers and nurses will be employed exclusively in this pavilion, so that the children will not mix with the other inmates, whilst they can follow up the regular school teaching. Thus real isolation will be attained and spread of infection prevented.

*Conflict between the Hospital Staff and the Nursing Staff in the Matter of Treating Abortion.*

The controversy between the medical profession and the law over the right to induce abortion, which has been mentioned in a previous letter, has given rise to a noteworthy incident in one of our general hospitals. As a rule, the nursing staff in all public hospitals in Vienna consists of Catholic nuns. In the last few weeks the nuns doing service in the surgical department of this hospital refused to give assistance at any operations in the nature of abortion. It must be pointed out that combined surgical and gynæcological wards are common in our outlying hospitals. The nuns in this case obeyed orders given by their matron, herself a Catholic nun, who no doubt acted under instruction from high quarters as a protest against modern ideas of eugenics and against restriction of birth from considerations of economics and morals. When the nuns refused to do their duty at gynæcological operations of this type, the medical staff organised a subsidiary service, whilst a complaint was lodged with the Ministry for Public Health as superintending authority against the nursing staff. A speedy remedy of the grievance was expected; instead, the Ministry decided that in future gynæcological surgery should not form part of the regular work of the surgical department of this particular hospital! Naturally the medical staff will not accept this ruling. Energetic measures are in preparation, and the coöperation of the profession will be obtained by the aid of the Union of Economic Organisation in order to bring about such a solution as will be acceptable to the medical staff of the hospital.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Glasgow Royal Mental Hospital.*

THE annual report of the physician-superintendent of the Glasgow Royal Mental Hospital—an advance copy of which reaches us through the courtesy of Dr. D. K. Henderson—contains many statements of interest. In the first place, the statistics of admissions and discharges are noteworthy. Of 120 discharges, 39 recovered, 27 were greatly relieved, and 13 were not improved. A complete recovery-rate of 32·5 per cent., as Dr. Henderson points out, is a satisfactory answer to the firmly rooted belief that "no one is ever likely to get better in a mental hospital." Of 120 admissions, 116 were private cases, and of these 53 were admitted as voluntary cases. Dr. Henderson stresses the great importance to be laid upon the recognition by the patient that he is mentally ill, and his subsequent coöperation in treatment, whether this be in an institution or not. That treatment can be successfully carried out without recourse to the mental hospital is reflected in the statement that in a little over a year, while 80 patients applied for advice at the out-patient psychiatric department of the Western Infirmary—where Dr. Henderson is in charge—in only two cases was it necessary to advise treatment in an institution. Public recognition of the value of prophylactic measures of this nature must show itself in the course of time both in the admission and recovery-rates recorded by institutions in centres where they are practised. A complete consulting staff has been appointed to the Hospital, and it is hoped that with their aid the interrelation between physical and mental illness may be more thoroughly investigated. During the year observations have been made upon the blood-sugar content, particularly in states of anxiety and depression; an attempt has been made to treat possible intestinal infection with bacillus acidophilus milk; and histological studies of cases of dementia præcox have also been carried out.

*Occupational Therapy in Early Mental Disorder.*—In recent years, the revival of occupational therapy as an aid to the treatment of early mental disorder has attracted a good deal of attention; and a considerable part of Dr. Henderson's report is devoted to this aspect of institutional life. In such a hospital as the Glasgow Royal Mental Hospital the majority of the patients are drawn from the professional and business classes. From both a physical and psychical point of view routine work is unsuitable for these patients. What is required is a task, suitably interesting and æsthetic for people of culture, and, moreover, so planned that it is capable of fulfilment by the particular patient. The confidence engendered and restored by a course of such occupational therapy is often of striking service in enabling the patient to make the mental readjustment necessary for his cure. Bearing this in mind, the Glasgow Royal Mental Hospital is to be congratulated on being "the first mental hospital in the British Isles to appoint a full-time occupational teacher, and to provide a separate occupational pavilion for the development of this type of therapy." Dr. Henderson concludes by making an appeal for a "well-educated, intelligent, refined type of girl" to take up mental nursing, which, as he points out, is a far more specialised calling than is generally supposed.

*The Morison Lectures.*

In his third lecture Dr. John Thomson dealt with the treatment of the mentally defective infant. The mainstay of this treatment is training, the burden of which falls on the mother, and it is the part of the medical man to instruct her. Dr. Thomson considers that it is usually best to reveal as little as possible to her of the true state of affairs, in view of the fact that many of these children die early from complications. The mother may in this way be spared much unnecessary distress. All that is usually required is to tell her that the baby is unable to do certain things that other babies can, and that with time and careful training he may be much improved. Constant repetition is necessary, and for this purpose the services of a tactful and sympathetic visitor are invaluable. To begin with, the mother must notice what things her baby is not doing as the normal baby should, and try to teach him to do them better one by one. He should be especially encouraged in anything he finds a little difficult, as any success he has will give him special pleasure, and so lead to confidence and encourage to further effort. As he grows older the mother must be careful never to do anything for him that he has learnt to do himself. She must be warned to watch for and check any bad habits the baby may develop, his attention, if possible, being drawn to something else. If he is slow in learning to speak, he should be constantly spoken to, even though he appears to be unheeding. She must attempt to develop character by increasing his self-control and independence. Affection for human beings or even animals and dolls is efficacious and should be encouraged. The emptying of the bladder and bowel in mentally defective children, as in young babies, generally takes place at regular intervals. The mother must try to find out the length of these intervals in her child's case, and lift him at the right times, so as to form a good habit.

The effect of this on character and happiness is very striking. Chewing of solid food may have to be taught. Open air is often beneficial in cases of constant, apparently causeless crying. In spastic diplegia special exercise should be used to help and encourage the child to gain more control over the stiff limbs. Passive and active movement should be employed. As the child gains more control simple games should be devised to induce him to use his limbs more freely. Dr. Thomson regards surgical interference as of occasional value in these cases.

*Measles in Scotland.*

The Scottish Board of Health has issued a circular to the local authorities announcing that, with the consent of the Government, a sum of £10,000 has been added to the maternity and child welfare grant, to be set aside for the treatment and control of measles. Recognising the very high death-rate from measles in children under 5 years—and a considerable proportion of these deaths occurs in infants under 1 year—while after the age of 5 years measles becomes much less dangerous, the Board considers that the problem is, perhaps, not so much the prevention of the occurrence of measles in the child as the postponement of it to the later years of childhood. Local authorities are invited to submit proposals for the further provision against measles, which might run on the following broad lines set out by the Board: (*a*) Notification of the disease; (*b*) appointment of a special ad hoc staff of visiting nurses for infectious diseases; (*c*) increased hospital facilities; (*d*) an increased service of health visitors. The scope of these preventive measures may also be extended to include whooping-cough.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Dangers of Swimming Pools.*

MANY cases of spirochætosis hæmorrhagica have recently been reported in individuals habitually frequenting the swimming pools which have of recent times been established in the poorer quarters of Paris. No other source of contamination having been discovered, it is thought that the infection must have arisen through the insanitary condition of these pools, and the Société de Médecine de Paris has passed the following resolution: "That this society, prompted by the recent outbreak of spirochætosis hæmorrhagica contracted in a Parisian swimming pool, coming after numerous cases reported of conjunctivitis, suggests that swimming pools of the city of Paris should be better supervised; that their water should be changed more often, and, above all, that bathers should not be allowed to go into the water except after thorough washing of the whole body with soap and tepid water."

*Spread of Malta Fever by Goats.*

Every Parisian remembers from childhood the pleasant sight of the itinerant goatherds, in the quieter quarters of the city, leading their little flocks of five to ten goats to the sound of a rustic flute. These were the vendors of goats' milk, and they brought something of the Mediterranean sunshine into the streets of Paris. A customer would bring a bowl, which the flute-player would fill with warm milk drawn there and then from one of his herd. Unfortunately, it has been found that this milk was dangerous. Several cases of Malta fever (*Micrococcus melitensis*) were notified in Paris, and investigation showed that children were infected by the milk of these itinerant vendors. In consequence, an order has been issued prohibiting the sale of milk from such sources in the public streets, and the Council of Public Health of the Department of the Seine, under the presidency of Prof. H. Vincent, has enacted the following measures: (1) veterinary inspection of goats; (2) control of itinerant goats'-milk vendors in the Department of the Seine. Goats which come from contaminated districts must not be allowed on the streets. Only thus can protection be ensured from a disease whose spread would be a great danger in the north of France.

*An Epidemic of Donors.*

A curious epidemic of people desiring to give blood for transfusion has been reported by two doctors from l'Hôpital Lariboisière to the Academy of Medicine. Three people came to the hospital in one week offering their blood for various purposes. The first was a young man of 22 who asked that his blood might be used for transfusion into that of any patient seriously ill. Next, a woman aged 35 desired to make an important communication to the chief medical officer, the communication being the expression of a wish to give her entire blood to a sick person in order that she might be of some use before dying. The third applicant was a young man who found his way to a ward and declared to the interne who received him his desire to lend himself for the performance of some experiment for the advance of medical science which would involve bleeding him to death. The explanation why in the Lariboisière quarter alone so many people should desire to sacrifice themselves in this special way is explained by the fact that in a cinema near the hospital a film has been shown wherein the heroine offered transfusion of her blood in dramatic circumstances.

## ROYAL MEDICAL BENEVOLENT FUND GUILD.

THE fourteenth annual general meeting was held at 11, Chandos-street, Cavendish-square, London, W., on March 12th, Lady (Rose) Bradford presiding.

Lady Fripp, chairman of the Council, read the report of the Council for 1923, which recorded increased support of the Guild by members of the profession and their friends. The festival dinner held in February, 1923, gave a great impetus to the work and its effects have been far-reaching. The sum directly realised was £1336 and, moreover, as a result of the scholarship scheme advocated by Sir Douglas Hogg in his speech, two new scholarships have been founded, one by the Manchester branch, and the other by Mr. Noel Wills, in memory of his mother. In each case the sum given was £250, which sum invested yields £30 annually for ten years. The St. Pancras branch had been resuscitated, and a North London section of the Guild had been inaugurated. Bournemouth had trebled its subscription, and Cardiff and Glasgow had sent most encouraging statements of increased contributions. Edinburgh, Peebleshire, Hampstead, Kennington, and Westminster had also made extra efforts. The Ladies' Medical Golfing Society competition brought in over £150, and the amount had been invested to found a scholarship of £30 for five years.

Mrs. Scharlieb, M.D., hon. treasurer, submitted the financial statement. The annual subscriptions in 1923 amounted to £1224, an increase of £120. Donations, under which heading were included the results of special efforts made on behalf of education, amounted to £3080, being £1925 more than in 1922. The total receipts for the year amounted to £4704; of this sum £900 had been devoted to the purchase of scholarship annuities; £2402 had been spent directly upon the Guild beneficiaries (£872 being for education); £1000 had been invested in War Loan, and the balance brought forward, after meeting general expenses, was £391.

Mrs. Arthur Ormond read the report of the Visiting and Case Committee. During 1923 the Committee had apportioned £766 in monthly grants, the recipients numbering 52. This was an increase of £138 over the amount spent in 1922, and more than £300 above that spent in 1921. Acute poverty, old

age, illness, and other causes resulting in inability to work formed the main reason for these grants. In addition, 54 applicants received special gifts of money during the year amounting to £312 in all, for sudden emergencies, such as sanatorium fees, special medical treatment, maintenance while waiting for a post, removal expenses, remedial exercises, fares, outfits, arrears of rent, and so forth. Spectacles had been supplied to three beneficiaries, and eight had had dental costs paid for them. £65 had been distributed in coal grants amongst 63 applicants. Holidays had been secured for 18 persons, and this was recognised increasingly as an extremely valuable part of the Guild's work. The Committee thanked those who had sent Surgical Aid letters and appealed earnestly for more of these, also for Royal United Kingdom Beneficent Association votes. The educational branch was a source both of anxiety and pride. The responsibilities of this work were shouldered almost entirely by the Guild, since all appeals made to the Royal Medical Benevolent Fund are referred to the Guild. The anxiety arose from the increasing number of applications for assistance as this enterprise of the Guild became more generally known. £872 had been spent on education and training during 1923, against about £700 in the previous year. Training had been given for most varied careers, for example, secretarial work, partial fees for a lady dentist, fashion artist, teacher of physical exercises, cookery, &c., and maintenance was paid in several cases where no money was available for food and housing during training. Mrs. Ormond described in detail the pitiable condition of various recipients of help from the Guild, and made it clear that the constructive policy of the Guild was to assist to earn, to educate to earn, and to induce self-reliance. Herein lay the explanation of the widening of its self-imposed responsibilities in undertaking educational and training schemes. It was satisfactory to note that there had been no instances during the past year of any beneficiary losing through his own fault a berth obtained for him. School reports and reports of careers subsequent to school life had been gratifying. It must not, however, be forgotten that the work could only be carried on if the medical profession maintained the inflow of money.

In the absence of Miss Swinford Edwards, the report of the Father Christmas branch was read by Lady Fripp, who also read a report of the Clothes Committee.

Lady Lewis moved, and Mrs. Laming Evans seconded, the re-election of Lady Bradford as president, Lady Fripp as chairman of the Council, and Mrs. Scharlieb as hon. treasurer. Mrs. Woodwark moved, and Miss Jenkyn Brown seconded, the resolution that Mrs. Barrett, Lady Lewis, and Mrs. Liveing be elected members of the General Purposes Committee. These motions were agreed to, and a vote of thanks to the President and Council, proposed by Mrs. Wilfred Harris, was carried with acclamation.

# The Services.

## ROYAL ARMY MEDICAL CORPS.

Maj. and Bt. Lt.-Col. R. B. Ainsworth to be Lt.-Col.

Capt. J. H. C. Walker to be temp. Maj. whilst empld. as a Dep. Asst. Dir. of Pathology.

### MILITIA.

Capt. W. A. Miller to be Maj.

### TERRITORIAL ARMY.

Lt. R. Morris (late Lan. Fus.) to be Lt. for service with Leys School Contingent, Jun. Div., O.T.C.

Lt. P. Mumford to be Lt.

General Hospitals: Lt.-Col. A. L. Flemming, having attained the age limit, is ret., and retains the rank of Lt.-Col.

Capt. A. C. Court to be Maj. (Prov.).

Capt. C. B. Moss-Blundell having attained the age limit is retd. and retains the rank of Capt.

Capt. A. N. Smith (late R.A.M.C., S.R.) to be Capt.

# Correspondence.

"Audi alteram partem."

## THE RISKS OF CERTIFYING IN LUNACY: INDEMNITY INSURANCE.

*To the Editor of* THE LANCET.

SIR,—With reference to the leading article on the case of Harnett *v.* Bond and Adam, published in your issue of March 8th, there can be no doubt as to the serious effect the decision of the courts in this case will have on the minds of all members of the medical profession—not only on those members of that profession who specialise in mental cases. The decision, however, only serves to emphasise the very grave risks to which all persons who are engaged in a professional capacity are daily subjected in carrying out their duties towards their patients or clients, notwithstanding how skilfully or carefully such duties may be exercised. The decision also serves to emphasise very strongly the fact that doctors, surgeons, and other medical practitioners should seriously consider the advisability of protecting themselves individually, by means of insurance, against possible claims for damages, in the same way as other classes of professional men have deemed it essential to do for a considerable time past.

Accountants, solicitors, directors of public companies, and other classes of professional men consider it money well spent to arrange insurance indemnities so that they may carry on their profession untrammelled by the ever-present risk of finding themselves ruined financially from the action of some ungrateful or spiteful client; for it must not be forgotten that, even though an action for damages may fail, the cost of defending such an action is heavy and often beyond the means of the unfortunate victim, the professional man.

This subject of professional indemnity insurance is one which has not received, hitherto, the publicity and attention which it deserves. The facilities which are available to accountants, solicitors, and others are equally available to members of the medical profession—at a very low cost—and with the remedy in their own hands, it would seem that the medical profession have not much need to fear the effect of the decision in the Harnett case.

We are, Sir, yours faithfully,

SANDERSON AND CO.,
Insurance Brokers.

91–93, Bishopsgate, London, E.C., March 7th, 1924.

*** The measure of the protection offered to medical men by their own admirable defence societies is indicated in their annual reports. The extent of the cover afforded to members of the Medical Defence Union against damages and costs of the other side in the event of an adverse verdict is now £3000, in any case which is undertaken on behalf of the member by the Council of the Union, and it must not be forgotten that a member of the Union is provided with his legal defence entirely free of cost to himself in addition to the indemnity insurance. The London and Counties Medical Protection Society undertakes to grant a similar indemnity to its members. In view of recent events it is probable that the Councils of the two Societies will consider carefully the question of extending the benefits of their present indemnity insurance. No doubt it is possible to insure against any risk by paying the necessary premium, but it seems unlikely that any insurance brokers could afford to insure individual members of the profession to the same extent as the cover provided by the defence unions, except upon a greatly enhanced premium. In giving protection at the rate of £1 to cover an insurance of £3000, the defence societies retain the power to refuse to indemnify at the discretion of the Council. Without this power of refusal the insuring society or company might be ruined by

insuring some disreputable individual. On the other hand, the Council of a medical protection society, if it did not do justice to a member, could be turned out forthwith. Since an insurance company is not subject to any such discretion the precise conditions have to be set forth minutely when the insurance might fail at a critical point.—ED. L.

## CERTIFICATES OF INSANITY.

*To the Editor of* THE LANCET.

SIR,—It is not quite clear what Dr. H. Rayner[1] desires; he appears to object to the responsibility attaching to certification, but could this be diminished or could the duty be performed by non-medical citizens? The risk indeed is small to a man who appreciates what he is doing, and who acts with commensurate care, while the responsibility for ordering detention actually does rest with the legal authorities. All that is required of the medical "witness" is definite, verified, or referenced evidence sufficient to enable this authority to form his own opinion. If only vague, "scrappy," technical *evidence* is offered, this will throw a greater moral onus upon the medical *opinion* "that the patient should be detained."

The very gravity of the charges that have to be made against a medical man for wrongly certifying (in order to constitute an actionable complaint) shows how well the profession is protected from frivolous recriminations. If the practitioner desires further security, he need not certify; or he could safeguard himself to some extent by refusing to accept a fee. Further legal immunity—security for the profession—could probably only be obtained at the expense of public security (from unconscientious certification), and even if we desired and could obtain this it would only aggravate the public suspicion, which is our real grievance.

It is quite true that the community demands full protection from insane conduct and then "salves its conscience" by reviling and penalising its obedient protectors, but psychiatry is not the only sufferer from this. The most it justifies us in demanding is a more definite and explicit statement of the principles upon which the community sanctions interference with personal liberty. It cannot be denied, moreover, that our own advocacy of compulsory detention for *curative purposes* as distinct from *security* has added to the prevailing uncertainty as to the grounds upon which detention is recommended and sanctioned.

Dr. Rayner's contention that "a non-official general practitioner is not the servant of the legislature, and should therefore not be required to take any responsible part in carrying out its objects," appears to me inadmissible and dangerous doctrine, as also does his demand that medical certificates of insanity should be secret and "privileged" documents. These form an essential part of the procedure for restricting the liberty of a fellow-citizen, and must stand public scrutiny. British law does not act on secret and *non-responsible* evidence.

Corporate action by the profession on the lines he advocates, and at the present moment (with a Government inquiry pending) appears to me very undesirable, especially action that appears designed to "force the hand" of the legislature. The only real and satisfactory security we can have is the confidence of the public. Vindictive and unreasonable action on their part is symptomatic of suspicion and a feeling that safeguards and supervision are insufficient. We have nothing to lose by any measures of security it may please to take: we have everything to gain by an overhauling of the Lunacy Law with which the profession has never been content. This overhaul has been promised, and surely our business is rather to prepare our case than to prejudice it by partisan action.

I am, Sir, yours faithfully,

Perth, March 15th, 1924. I. D. SUTTIE, M.B.

[1] THE LANCET, March 15th, p. 570.

*To the Editor of* THE LANCET.

SIR,—Dr. Rayner's suggestion for the protection of medical practitioners through the wiping out of every trace of the evidence given by them for committal to an asylum would, I fear, be likely to lead to a reaction in the direction of providing more safeguards for the individual concerned. It would also incidentally abolish Section 82 of the Lunacy Act.

The question of a doctor's liability in the matter of signing a certificate did not arise in the recent action of Harnett *v.* Bond and Adam. Certifying doctors are at the present moment amply protected by reason of the fact that in the eye of the law it is the reception order signed by the judicial authority, and not the medical certificate, which is the cause of the alleged lunatic's committal. The certifying doctor escapes liability on the ground that he is only a witness tendering evidence. In common with all other witnesses, the reliability of the doctor's evidence ought in fairness to be tested through cross-examination by the solicitor or friend of the alleged lunatic in the presence of the magistrate and of the individual himself. Should the latter desire it, the whole proceedings could be conducted in privacy. Doctors need not consequently be in any dread as to liability for damages arising out of bona fide certification, while their sworn evidence from the witness-box will be regarded as strictly privileged.

I am, Sir, yours faithfully,

S. E. WHITE, M.B., B.Sc.

Tower Hill, E., March 16th, 1924.

*To the Editor of* THE LANCET.

SIR,—I have read Dr. H. Rayner's letter in your issue of March 15th, in reply to which I think the point he raises is covered by the last paragraph of Section 330, Subsection 1, of the Lunacy Act, 1890, which reads as follows: "He (the doctor signing the medical certificate) shall not be liable to any civil or criminal proceedings whether on the ground of want of jurisdiction or any other ground *if such person has acted in good faith and with reasonable care.*"

I am, Sir, yours faithfully,

STANLEY A. GILL, M.D., &c.

Formby, Lancs, March 17th, 1924.

## HARNETT *v.* BOND AND ADAM.

*To the Editor of* THE LANCET.

SIR,—In your leading article with reference to this case in your issue of March 8th, 1924, I note with satisfaction that you express yourself as "amazed and horrified" that the jury should have found that Dr. Bond was aware of the plaintiff's sanity at the time when he was taking measures to return him to Malling House, and in addition to which I believe he stated in his evidence that he considered him to be of unsound mind. You also draw attention to the fact that Justice Lush expressed himself surprised on learning that the patient is not personally made aware of the grounds of his detention, and, if I remember rightly, conveyed the impression that he considered the patient should be presented with a copy of his certificate. Personally, I have always treated these certificates as confidential documents, and I should be interested to know whether this is not the way that they are looked upon by every Medical Superintendent, and also whether this is not the attitude the Medical Profession would expect us to adopt?

I am, Sir, yours faithfully,

RICHARD EAGER, O.B.E., M.D.,
Medical Superintendent, Devon Mental Hospital, Exminster.

March 12th, 1924.

*** To a question asked in the House of Commons last week "Whether, in view of the verdict in Harnett *v.* Bond and Adam, the Minister of Health proposed to suspend Dr. Bond from acting as a Lunacy Commissioner pending the decision of the Court of Appeal," Mr. Wheatley replied in the negative. Mr. Wheatley called attention to the fact that a

discussion could not be entered into upon a case which is still *sub judice*, but he went on to say: "I would draw attention to the fact that Mr. Justice Lush stated that he agreed that there was no evidence of any dishonesty or *mala fides* on the part of Dr. Bond. In view of this fact, and of Dr. Bond's long and distinguished record of public service and his eminent position in the scientific world, I see no reason to take the action suggested." The answer was not given orally, which is to be regretted, as possibly supplementary questions would have made certain points clearer. With the learned judge's expression in court, after the verdict, we cordially agree.—ED. L.

## MEMORIAL TO PROF. O'SULLIVAN.

*To the Editor of* THE LANCET.

SIR,—Two meetings of the late Prof. A. O'Sullivan's friends have been held in Trinity College, at which it was resolved to found a memorial to him in connexion with the Medical School in Trinity College, where he held for so long the chair of pathology. Any of your readers who may wish to take part in the project are asked to write to either of the undersigned, who will supply further information.

We are, Sir, yours faithfully,

E. J. GWYNN, } Honorary
JOSEPH W. BIGGER, } Secretaries.

Trinity College, Dublin, March 15th, 1924.

## *B. PYOCYANEUS* INFECTION.

*To the Editor of* THE LANCET.

SIR,—The case of *B. pyocyaneus* infection reported by Dr. H. Ronald Carter in THE LANCET of March 1st is very interesting. Now and then one discovers this organism in various parts of the body, usually in association with other bacteria, and the question of vaccine treatment is raised. My object in writing this note is to draw attention to a method of treatment which Dr. Carter has not mentioned, and which I was taught some years ago—i.e., irrigation with 1/500 or 1/1000 biniodide of mercury. Since that time I have invariably advocated this method and it seems to work very well indeed. When there is an open wound or channel and irrigation can be carried out freely most of the cases have cleared up in a week or two. I have never used a vaccine but have always held one in reserve, and am grateful for the warning as to the severity of the reaction which may take place unless the dose given is very small. As Dr. Carter points out, the bacteriologist cannot always tell what the minimum dose in a particular case should be, and when a violent reaction does occur it is not easy to persuade the patient to continue with the treatment. An experience of mine has some bearing on this point. A short time ago the initial dose of an autogenous vaccine which I made for "colds" was followed by a general urticarial rash within 24 hours, and the patient was greatly alarmed. I felt sure it was not due to the character of the vaccine, and asked for its return with a view to investigation. I first injected some under my own skin and then inoculated some into various media. My skin showed a slight reaction—redness and swelling—and the tubes remained sterile. My relief can be imagined. I take it the urticaria was due either to an idiosyncrasy on the part of the patient, anaphylactic phenomenon, or to a coincidence. The patient has since received several doses of the same vaccine without any untoward symptoms.—I am, Sir, yours faithfully.

ERNEST H. SHAW.

Royal Northern Hospital, March 12th, 1924.

DONATIONS AND BEQUESTS.—By will the late Lieut.-Colonel John Ritchie, of Mossley Hill, Liverpool, left £500 to the Royal Southern Hospital, Liverpool, and £250 to the Liverpool Royal Infirmary; the Children's Infirmary, Liverpool; the David Lewis Northern Hospital, Liverpool; the Bootle Borough Hospital; and the Liverpool St. Paul's Eye and Ear Infirmary.

# Obituary.

## ROBERT ALEXANDER BICKERSTETH, F.R.C.S. ENG.

Mr. R. A. Bickersteth, honorary consulting surgeon to the Royal Infirmary, Liverpool, died at Bournemouth on March 6th in his sixty-second year.

A son of the late Mr. E. R. Bickersteth, F.R.C.S., Robert Bickersteth was educated at Eton and Trinity College, Cambridge, gaining the Natural Science Tripos in 1884 and his M.A. in 1887. He obtained his surgical experience at St. Bartholomew's Hospital, graduating M.B., Ch.B. in 1891, and in the same year he became a Fellow of the Royal College of Surgeons. He was appointed honorary surgeon at the Royal Infirmary, Liverpool, some 30 years ago, and later became lecturer and examiner in clinical surgery in the University of Liverpool. As a clinical teacher he appealed to the student by the practical usefulness of what he had to offer them; he laid stress on the importance of painstaking observation and on the maxim that more errors are due to want of care than to want of knowledge. When he relinquished the position of honorary surgeon at the infirmary in 1921, the committee of that institution elected him honorary consulting surgeon in recognition of the services which he and his family had rendered to the infirmary for three generations. He was a member of the Association Internationale d'Urologie and a corresponding member of the Association Française d'Urologie. His publications on urinary surgery, which appeared in THE LANCET and elsewhere, were much in advance of his time. Twenty years ago he perfected and described an intravesical arrangement for drawing off urine from either ureter separately, and he went on to catheterise the ureters and to deduce from the results the conservative surgery of the renal pelvis. His knowledge of morbid anatomy was sound, and he was apt to see with the naked eye what others required the microscope to discern.

We have received the following personal appreciation from "J. T. M.":—

"Of the late Mr. R. A. Bickersteth it is difficult to write in such a way as adequately to convey a picture of that gentle, kindly personality that won him so many friends. He was one of those men, gifted with a charm that could not fail to draw friendship, who through the shyness of his demeanour often left his quiet humour and his sense of the deep things of life unsuspected. A man of the highest ideals in his profession, he was a good friend to the Liverpool Medical Institution, to which he gave his library, comprising many rare and valuable volumes, on his retirement. Mr. Bickersteth took more than a passing interest in astronomy, and photography also claimed his attention. His great hobby, however, was shooting, and only rarely did a season pass without a visit to Scotland. During the war he served at home and for more than a year in No. 57 General Hospital in France, and there is no doubt that it was during that time that his health began to fail. It will be long before his fine presence and his kindly heart will be forgotten."

On March 5th a memorial service was held in the Chapel of the Royal Infirmary, where Mr. Bickersteth had spent many years of devoted service. The service was conducted by the Rev. Mr. Macdonald, chaplain to the hospital, and there was a large attendance of friends. Mr. Bickersteth is survived by a widow and several sons and daughters.

## DONALD WILLIAM CHARLES HOOD, C.V.O., M.D. CAMB., F.R.C.P. LOND.

WE regret to announce the death of Dr. Donald Hood, consulting physician to the West London Hospital, which occurred on March 15th at his house in St. John's Wood, where he had gone to reside on retirement.

Donald William Charles Hood was born in 1847 at Market Lavington, the eldest son of Sir Charles

Hood a Lord Chancellor's Visitor in Lunacy. He was educated at Harrow and Gonville and Caius College, Cambridge, completing his medical education at Guy's Hospital. He graduated in medicine at Cambridge in 1871, proceeding eight years later to the M.D. degree and taking the Membership of the Royal College of Physicians of London in the same year, being later elected Fellow.

After holding appointments at Guy's Hospital, he was appointed assistant physician to the West London Hospital, and obtained excellent early introduction to private practice by close professional relations with Sir William Gull. He proved himself in public and private capacity a very able physician. He did excellent work in the early "nineties" in connexion with the treatment of rheumatism, publishing statistics with reference to the use of salicylates in acute cases which were recognised as of real practical value. He wrote critically also on the diagnosis and treatment of typhoid fever and on acute pneumonia, while a long line of residents at the West London Hospital could testify to his merits as a hospital physician and a clinical teacher. His professional position, although he was not on the staff of any teaching hospital, was recognised by his appointment as examining physician to the Foreign Office, and as an examiner of medicine in the University of Cambridge. He was decorated after the Boer War for services rendered in connexion with two great funds instituted for the relief of wounded and sick officers during that war, while he was also both a governor of Bethlem and Bridewell Royal Hospitals and a member of the board of management of Earlswood.

Dr. Hood married Alice, daughter of John Wickham Flower, by whom he had one son and three daughters.

## THOMAS BRITTIN ARCHER.
### M.R.C.S. ENG.

THE late Mr. T. B. Archer, who died recently of angina pectoris in his seventy-ninth year, was the youngest child of Mr. Goodwyn Archer, of Ely, Cambridgeshire. Born in 1846, he was educated at the King's School in Ely and afterwards at the Grammar School at Ipswich. In 1865 he was apprenticed to Dr. Richard Jones, of Woodbridge, Suffolk, and completed his medical studies at St. Bartholomew's Hospital, obtaining the qualification of M.R.C.S. When the first ophthalmic ward of St. Bartholomew's Hospital was opened, Mr. Archer was appointed ophthalmic house surgeon in November, 1870, and served for a year. Subsequently he visited in rotation the principal ophthalmic hospitals in Brussels, Berlin, and Vienna for a period of nearly three years. On his return in 1873 he was appointed clinical assistant to the Central London Ophthalmic Hospital and the Royal London Ophthalmic Hospital, and became surgeon to the former hospital in the same year. He rose to the senior surgeoncy in 1879, and from that time as chairman of the medical committee did all in his power to increase the efficiency of the hospital both as regards its structure and personnel.

Retiring at the age limit of 65 in 1911 he became chairman of the hospital at the most critical period of its history when its funds were at low ebb and money had to be obtained to build a new institution, and it may be said that to his services the new hospital owes its existence.

On the outbreak of war he once more became an active member of the staff, helping daily to replace those members of the staff who had been called up on active service. In appreciation of his work the committee of management named one of the wards in the new hospital the "Archer Ward." In 1921 he resigned the chairmanship of the hospital and retired into private life. He was fond of music and painting, and in his youth was an expert with both rod and gun. Under a somewhat critical exterior he hid a generous, straightforward nature which endeared him to those who knew him well.

## GEORGE PALMERSTON NEWBOLT.
### F.R.C.S. ENG.

THE sudden death of Mr. G. P. Newbolt, lecturer on clinical surgery at the University of Liverpool, on March 9th, in his sixty-second year, came as a great shock to the medical community in Liverpool, where Mr. Newbolt filled an important and an honoured place. He received his medical education at St. Bartholomew's Hospital, London, and at Durham University, graduating M.B. Durh. in 1884. The following year he obtained the M.R.C.S. Eng., followed in 1888 by the Fellowship. Later, in 1896, he became a Heath scholar of Durham University, where he worked for some time as assistant demonstrator in anatomy. After graduation he continued his training as a house surgeon at St. Bartholomew's, and on leaving London was appointed surgeon to a section of the Manchester Ship Canal. Here he came in touch with Sir Robert Jones, with whom he formed a life-long friendship. On the completion of work on the canal Mr. Newbolt became surgeon to the Liverpool Stanley Hospital till 1897, when he was elected to the staff of the Royal Southern Hospital, ultimately reaching the position of senior surgeon and dean on the retirement of Sir Robert Jones. Mr. Newbolt also held the appointment of honorary consulting surgeon to the Clerical Union, North-Western District, and of honorary surgeon to the Leasowe Hospital for Children. He published several interesting monographs on various aspects of surgery in the *Liverpool Medical Journal* and elsewhere.

During the war Mr. Newbolt did untiring work in connexion with the officers' hospital at Croxteth Hall and the Myrtle-street Auxiliary Hospital. He was at one time chairman of the Medical Faculty of the University, and recently was elected president of the Liverpool Medical Institution. Superficially he was not one to attract friendship, but his real worth became apparent on further acquaintance, and those who knew him best respected him most. He leaves a widow, a son, and three daughters.

## HENRY HAMMOND SMITH,
### M.R.C.S. ENG.

Dr. H. H. Smith, surgeon to the Corbett Hospital, Stourbridge, died on March 4th at his home in Kensington at the age of 73. Born in 1851, he received his medical training at Middlesex Hospital, qualifying M.R.C.S. in 1872 and L.R.C.P. two years later. His work as a general practitioner gave him a first-hand knowledge of factory work and factory conditions, and when in 1901 a Royal Commission on Arsenical Poisoning was established, Dr. Smith's services were engaged to investigate the liability of articles of food and drink to be contaminated by arsenic. His inquiry was detailed and exhaustive and the results of his work are recorded in an appendix to the report of the Commission, which is still worth reading. He also carried out investigations on behalf of the Royal Commission on Tuberculosis during the years 1905 to 1907, when he did valuable work in connexion with swine tuberculosis and also in obtaining material for the Commission's inquiry into lupus. During the war Dr. Smith was appointed inspector of foods under the Local Government Board.

Yet with all his work he found time to devote to sport and country pursuits which he loved. He was a first-class shot, an excellent fisherman, and an authority on game birds. He was attached to the staff of the *Field*, to which journal he made many notable contributions, chiefly in connexion with animal pathology. In this connexion he conducted several investigations of great importance to sportsmen and contributed chapters to "The Grouse in Health and Disease" and "Tegetmeier on Pheasants." Dr. Smith was enthusiastic and indefatigable in everything which he undertook and he worked assiduously up to his death. His ability and charm of manner endeared him to all.

# Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council on March 13th, Sir John Bland-Sutton, President, in the chair, licences to practise dentistry were conferred upon the following:—

A. V. Adams, Durham; F. E. H. Andersen and J. L. Anderson, Royal Dental; F. F. Anslow, London; A. R. H. Bennett, Guy's; C. V. Berry, Middlesex and Royal Dental; W. E. Berwick, C. E. Bowen, F. F. Brayfield, and W. E. Brigham, Guy's; H. A. Brown, J. N. Brummer, and W. A. Cannell, Royal Dental; L. M. Cartwright, Guy's; R. Chase, Royal Dental; J. W. Cooper, Bristol; W. M. Cowper, Royal Dental; F. H. R. Davey, Durham; F. G. Davies, Guy's; H. L. Davies, Royal Dental; E. Dixon, Leeds; H. M. Doubleday, Guy's; C. E. Down, Bristol; V. R. Estment, Guy's; H. B. Furniss, Leeds; G. V. Gibbs, Royal Dental; J. L. Gordon, London; G. L. Gould, Guy's; R. Hale, Royal Dental; D. S. Hammond-Williams, Guy's; M. W. Harvey, Royal Dental; R. M. Hastings, A. Hirschberg, and A. L. Hodgkinson, Guy's; H. Ihsan, Royal Dental; A. R. Jackson, Guy's; F. C. Jackson, Liverpool; H. H. Jager, Royal Dental; O. P. James, Guy's; H. P. Jeffery and A. J. Jordens, Royal Dental; L. S. J. Kanaar, Guy's; A. C. King, T. S. Latham, and R. R. Laver, Royal Dental; W. E. Leaver, E. R. Longhurst, and W. C. McGhee, London; P. J. Malone, Royal Dental; V. J. Matthews, Univ. Coll.; C. A. L. Meredith and D. G. Moffatt, Royal Dental; G. J. Moore, Birmingham; J. R. A. Moore, Guy's; E. W. G. Moran, Univ. Coll.; D. B. Muller, Royal Dental; V. W. Percival, R. G. Pengelly, and S. A. Pleasant, Guy's; Muriel Possener and W. E. Potter, Royal Dental; H. J. Ravenscroft, Leeds; J. F. S. Reynolds, Guy's; D. G. Ritchie, London; W. R. S. Robertson, Royal Dental; A. W. Shovelton, Birmingham; D. L. Simpson, Univ. Coll.; T. H. Smailes, Royal Dental; V. H. Tapp, Sheffield; F. R. Taylor, Guy's; G. Thom, Royal Dental; G. T. Thompson, Guy's; D. G. Thomson, Royal Dental; A. E. Tidd, J. B. F. Tunstall, L. P. Tupling, and A. E. J. Van Noorden, Guy's; G. Wasif and A. Wendel, Royal Dental; and F. S. S. Whiter, London.

Museum demonstrations will be given in the Theatre of the College in Lincoln's Inn-fields on Fridays and Mondays during March and April at 5 P.M., as follows: March 28th, Sir Arthur Keith, Specimens illustrating the Various Maldevelopments of the Palate; 31st, Mr. C. E. Shattock, Lymphatic Glands; April 4th, Sir Arthur Keith, Development and Surgical Anatomy of the Nasal Air Sinuses; 7th, Mr. C. E. Shattock, Osteomyelitis; 11th, Sir Arthur Keith, Irregularities in the Growth of the Palate and of Eruption of the Teeth; 14th, Mr. C. E. Shattock, Tumours of the Colon. The demonstrations are open to advanced students and medical practitioners.

HUNTERIAN SOCIETY.—The third dinner meeting of the Hunterian Society will be held at Simpson's Restaurant, Cheapside, London, on March 24th, at 7.30 P.M. Dinner will be followed by a discussion on Rheumatics, which will be opened by Dr. F. J. Poynton.

CANCER HOSPITAL, LONDON.—The annual dinner of the hospital will take place at the Langham Hotel on Wednesday, April 2nd, at 7.45 P.M., with Mr. W. Ernest Miles in the chair. Tickets may be obtained on application to the Registrar, Cancer Hospital, S.W. 3.

ROYAL INSTITUTION OF GREAT BRITAIN.—The Friday evening discourse at 21, Albemarle-street, W., on March 28th, at 9 P.M., will be delivered by Prof. Hugh MacLean on Insulin. On March 27th, at 5.15 P.M., Mr. D. S. M. Watson will deliver the second of two lectures on Evolution To-day.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION: SPECIAL COURSES.—A two weeks' intensive course will be given at the London Temperance Hospital, Hampstead-road, from March 31st to April 12th. The course will include practical demonstrations each morning from 10.15 to 12.15, ward rounds and out-patient clinics in the afternoon from 2 to 4 P.M., and special demonstrations on Saturdays at Bethlem Royal Hospital and the Royal Westminster Ophthalmic Hospital. A clinical lecture will be given each day at 4.30 P.M. (to which members of the profession are invited), the first, on March 31st, by Sir Humphry Rolleston, being on the subject of Jaundice. Among other lecturers will be Mr. V. Zachary Cope, Mr. Ernest Clarke, Dr. Soltau Fenwick, and Mr. Ernest W. Miles. A three weeks' course on Ophthalmology will be given at the Royal Westminster Ophthalmic Hospital from March 31st to April 17th. In addition to clinical work each afternoon special demonstrations will be given twice a week on Medical Ophthalmology and Methods of Examination. Copies of the syllabus and further particulars will be forwarded on application to the Secretary to the Fellowship of Medicine, 1, Wimpole-street, W. 1.

NORTH-WESTERN TUBERCULOSIS SOCIETY.—A meeting of this society will be held at the X ray department of the Manchester Royal Infirmary on March 27th at 3.15 P.M., when Dr. A. E. Barclay will give a demonstration dealing with the differential diagnosis of tuberculosis.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION.—A general meeting of the Association will be held at 11, Chandos-street, London, W. 1, on April 9th at 5 P.M., when Mr. Ernest Clarke, F.R.C.S., will read a paper on the Care of the Sight of School-children.

LONDON (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN.—Scholarships of the total value of £1100 will be awarded in May and July of this year. Full information and forms of application can be obtained from the Warden and Secretary, 8, Hunter-street, London, W.C. 1.

OPHTHALMIC BENEFITS FOR INSURED PERSONS.—A group of ophthalmologists especially interested in this subject have formed themselves into a committee in order to support the British Medical Association in any action that may be taken to secure a working arrangement for the treatment of insured persons by duly qualified ophthalmic surgeons. "Optical benefit," as it is described in the insurance regulations, is dealt with in different ways by the various approved societies, but in only one society is any satisfactory arrangement made to provide for the insured the services of competent ophthalmic surgeons. This is unfair to insured persons and most serious for the future of ophthalmology in this country. A meeting to receive the report of the above committee and to consider their proposed programme will be held in the Council Chamber of the British Medical Association, 429, Strand, London, W.C., on March 27th, at 5.30 P.M. The support of ophthalmologists is requested, and any who desire to attend and would like to receive further particulars are asked to address their letters to the Ophthalmic Benefit Committee, 30, Finsbury-square, London, E.C. 2.

LONDON COUNTY COUNCIL AND DETENTION OF LUNATICS.—The Mental Hospitals Committee of the London County Council has prepared a lengthy report on the precautions and safeguards which exist to prevent detention of sane persons in the Council's mental hospitals. After reviewing in detail the existing procedure for admission, the Committee point out that the Council has made more than one endeavour to secure uniformity of practice, by seeking legislative authority for the establishment of receiving houses in London, to be administered by the Council, to which prospective parish cases could be admitted for observation, and where certification could be carried out by expert practitioners under uniform conditions. The legislation which the Council promoted never passed both Houses of Parliament. The Committee further explain that patients in county and borough mental hospitals enjoy a "material safeguard against improper detention," inasmuch as these institutions are managed by a committee appointed by the responsible public authority. The Subcommittees of the Mental Hospitals Committee meet fortnightly, and it is a statutory duty for at least two members together, once at least in every two months, to inspect every part of the hospital at which they serve, to see every patient, and afford full opportunity of complaint, and sign records of their inspections. Every private patient has the right to request a personal and private interview with a member of the visiting committee. Most discharges follow a recommendation by the medical officer, but the visiting committees do not necessarily rely solely on the medical staff, and may themselves institute inquiry as to the fitness for discharge of any patients. In the course of a debate on the Committee's report, Mr. Watts expressed the hope that the Committee would take a very strong view with regard to "private lunatic asylums." It should not be in the power of any individual to exploit mental disease. Improper detention occurred largely in such institutions, and although the cancellation of licences might involve claims for compensation, he believed that, in view of the state of public feeling, the Council should accept the risk. Dr. Alan Randle, the recently appointed vice-chairman of the Labour Party on the Council, said he would be sorry if only specialists were consulted in the matter of certification, because they had been so long removed from the ordinary conditions of human life that they might not even be able to detect insanity. The general practitioner, who was more in touch with the ordinary habits and activities of his patients might, if he suspected insanity, call in the assistance of a specialist, who would probably be better qualified to determine the exact type of insanity, if insanity were present. But it was common knowledge that the trouble with the specialist on any subject was the danger of his recognising his "speciality" in almost every case brought to his notice.

LADIES' MEDICAL GOLFING SOCIETY.—The spring meeting will be held at Moor Park Golf Club, Rickmansworth, on March 27th. In the morning a medal round will be played and in the afternoon foursomes against bogey. Entries should be sent to the hon. secretary, Mrs. Laming Evans, 50, Seymour-street, London, W. 1.

NATIONAL LEAGUE FOR HEALTH, MATERNITY, AND CHILD WELFARE.—The annual general meeting of the League and of the National Association for the Prevention of Infant Mortality will be held to-day (Friday, March 21st) at Carnegie House, 117, Piccadilly, London, W., at 4 P.M., with Dr. G. F. Still in the chair. Miss Margaret Bondfield, M.P., will speak on Mothers' Pensions, and Miss Eglantyne Jebb, hon. secretary of the Save the Children Fund, will speak on the Children's Charter.

DEAL: OPENING OF WAR MEMORIAL HOSPITAL.—On March 17th Prince Henry opened the hospital which has been erected, free of debt, at a cost of about £20,000, as a memorial for Deal, Walmer, and district, commemorating some 500 men from nine parishes who gave their lives in the war.

HARNETT *v.* BOND AND ADAM.—At a conference on the bearings of this case, held at the instance of the British Medical Association, it was decided in view of the pending appeal to appoint a small representative committee to watch the situation on behalf of the medical profession and to take such action as may be considered necessary. Those present at the conference included representatives of the British Medical Association, the Medico-Psychological Association, the Medical Women's Federation, the Medico-Legal Society, the Medical Defence Union, and the London and Counties Medical Protection Society.

MENTAL AFTER-CARE ASSOCIATION.—At the annual meeting of the Association held at the Mercer's Hall, London, on March 11th, Sir Charles Wakefield being in the chair, Sir James Crichton-Browne said that the Association had during the past year afforded relief to 1042 patients, each of whom had given excellent testimony to their treatment while in various mental hospitals, and expressed readiness to return should a mental relapse necessitate it. In the report, presented by Dr. Henry Rayner, chairman of the Association, it was stated that since its formation after-care associations had been established in several European countries, in the United States, Japan, and Australia. The chief object of the Association was to restart in life all persons who were convalescent, or had recently recovered from mental illness.

MEDICAL SOCIETY OF LONDON: ANNIVERSARY DINNER.—The 101st anniversary dinner of the Society was held at the Grand Hotel on March 12th, Dr. Herbert Spencer presiding. The toast of the evening was proposed by Sir Humphry Rolleston, who gave a sympathetic account of the foundation of the Society by Lettsom on democratic lines, the first Roll of Fellows consisting of 30 physicians, 30 surgeons, and 30 apothecaries. Dr. Spencer, in responding, said that in one more year the Society would attain the reputed age of Thomas Parr when he died. There were now 620 Fellows, 19 having joined in the course of the year. The concerted research on the results of operation for cancer of the breast was, he said, making progress. Dr. H. A. Des Vœux, in proposing The Services, alluded feelingly to the self-sacrificing labours during the war of the medical officers and of the mercantile marine which had involved much heroism but little glory. Surgeon Vice-Admiral J. Chambers, in responding, spoke of the dangerous plight in which the economic campaign had placed the Naval Medical Service which could not obtain the needed candidates. Better conditions had been provided in the Service for study, work, and research, and he appealed to the teaching schools for their help. Sir John Bland-Sutton proposed The Visitors in words of gentle raillery, coupled with the names of Mr. J. Wheatley, M.P., Minister of Health, and Dean Inge. Mr. Wheatley, in replying, described the office of Minister of Health as one of the dangerous trades, for, since 1919, five men had filled the position. His own relation to medicine was intimate, for he had given his only two children to the medical profession, seeing therein an opportunity, not of making a fortune, but of leading a useful life. He was looking forward to a time when the philosophy of human service was given its proper place in the education of the race; even now medicine was overflowing its scientific limits and coming into relation with other social service. Dean Inge, in his reply, added to the gaiety of the evening. The toast of The President was proposed by Dr. A. F. Voelcker and received with acclamation. Dr. Spencer said how much the Society owed to its hon. secretaries, Mr. T. P. Legg and Dr. F. S. Langmead.

# Parliamentary Intelligence.

## HOUSE OF COMMONS.

TUESDAY, MARCH 11TH.

*Law Relating to Coroners' Inquests.*

Mr. DIXEY asked the Home Secretary whether, in view of the general feeling as to the non-desirability of inquest proceedings and magisterial investigations in murder and manslaughter cases being conducted approximately at the same time in different courts and the possible hardships resulting therefrom, he would consider appointing a committee to inquire into the whole matter.—Mr. HENDERSON replied: A Bill for amending the law relating to coroners' inquests is now under consideration, and this is one of the many important points which are receiving attention.

*Pauper Lunatics in Asylums.*

Major CHURCH asked the Minister of Health whether the Government proposed, in view of the heavy financial burdens imposed on boards of guardians, to introduce legislation increasing the Exchequer grants in respect of pauper lunatics in asylums and making provision for new grants in respect of pauper lunatics, imbeciles, and epileptics maintained under the care of Poor-law authorities in accordance with the recommendations made by the Kempe Committee in 1914.—Mr. WHEATLEY replied: I regret that I cannot give any undertaking as to the introduction of legislation for this purpose.

*Medical Officer of Parkhurst Prison.*

Mr. HAYES asked the Home Secretary whether the medical officer's duties at Parkhurst Prison were wholly or in part subject to the control or direction of the governor or whether the medical officer was directly responsible to the Prison Commissioners.—Mr. HENDERSON replied: The Governor of Parkhurst Convict Prison is the chief officer to whom the other officers are subordinate, but the medical officer has entire responsibility to the Commissioners, through the governor, for the medical treatment of the convicts.

*Case of Harnett* v. *Bond.*

Mr. SCURR asked the Minister of Health whether, in view of the verdict of the jury in Harnett *v.* Bond, he proposed to suspend Dr. Bond from acting as Lunacy Commissioner pending the decision of the Court of Appeal.—Mr. WHEATLEY replied: Without entering into a discussion of a case which is still sub judice, I would draw attention to the fact that Mr. Justice Lush, in the course of the discussion which took place in court after the jury had returned their verdict, stated that he agreed that there was no evidence of any dishonesty or *mala fides* on the part of Dr. Bond. In view of this fact and of Dr. Bond's long and distinguished record of public service and his eminent position in the scientific world, I see no reason to take such action as is suggested in the hon. Member's question.

Mr. LANSBURY asked the Prime Minister whether he would cause to be laid upon the Table of the House of Commons the minutes of evidence in the case of Harnett *v.* Bond before any estimate was submitted to the House for the purpose of indemnifying Dr. Bond; and whether he would state on what ground this case was being taken to the Court of Appeal at further cost to the public.—Mr. WHEATLEY replied: The transcript of the shorthand notes of the evidence is extremely bulky, and such copies of it as are available are, I understand, required for the purposes of the proceedings in the Court of Appeal. After the appeal has been disposed of, I will consider whether it is practicable to make the transcript available for the information of hon. Members. The answer to the second part of the question is that the case is being taken to the Court of Appeal in the public interest.

*Remuneration of Panel Doctors.*

Sir KINGSLEY WOOD asked the Minister of Health whether he was now is a position to bring forward his proposals relating to the increased payment proposed to medical men on the panel lists.—Mr. WHEATLEY replied: The matter referred to by the hon. Member is still under consideration, and I am not yet in a position to make a statement on the subject.

*The Spahlinger Treatment.*

Sir WALTER DE FRECE asked the Minister of Health the present attitude of the Government with regard to the Spahlinger treatment.—Mr. WHEATLEY replied: I am anxious to arrange for a scientific investigation of this method of treatment in this country, and have personally given Mr. Spahlinger assurances to that effect.

THURSDAY, MARCH 13TH.

*Army Medical Services.*

On the motion that "the Speaker do leave the chair on the Army Estimates 1924–25,"

Mr. STEPHEN WALSH, Secretary of State for War, said that the health of the troops continued to be most satisfactory, particularly as regarded avoidable diseases, which showed a marked decrease during the year in spite of the fact that the Government had saved money on medical services. Reductions of over £100,000 had been made and the regimental establishment of the R.A.M.C. was again being reviewed.

Lieut.-Colonel FREMANTLE called attention to the very serious condition the Army was in owing to the position of the Royal Army Medical Corps. He said he had drawn the attention of the late Under Secretary for War to the lack of candidates for that Service. There were 15 vacancies advertised and only four candidates came forward; 11 vacancies were still unfilled. There was no selection whatsoever. Although two months' notice was afterwards given he believed that the result had been that for 40 vacancies only eight candidates had presented themselves. The whole force was being starved of officers from the very start. This matter required serious inquiry. The result had been to block promotion. The thing was utterly top-heavy. They had 101 colonels, 343 majors, 422 captains, and only 7 lieutenants. He believed that the same difficulty existed in connexion with the Colonial Medical Services. There ought to be a really competent inquiry into the recruitment of medical officers for public services. He would also like to know what had been done to secure coördination, particularly of the medical services, medical stores, medical personnel, and medical institutions, so that they might be used with greater economy and efficiency.

The motion that "the Speaker do leave the chair" was then agreed to.

*Mental After-Care of Ex-Service Men.*

Mr. PIELOU asked the Minister of Pensions whether he had invited the Mental After-Care Association to draft a scheme for the purpose of looking after ex-Service men discharged from asylums; and, if so, was he prepared to meet the cost of such scheme.—Mr. F. O. ROBERTS replied: The answer to the first part of the question is in the negative, but for some time my department has been in communication with the Mental After-Care Association with a view to exploring as to how far the Association's activities in connexion with the after-care of civilians discharged from asylums would embrace the pensioner. We welcome the coöperation of the Association, but I would remind the House that in so far as the pensioner when discharged from an asylum will need treatment or institutional care the necessary provision is made by my department.

*Lunacy Law Reform.*

Sir ELLIS HUME-WILLIAMS asked the Home Secretary whether, in view of the fact that the system under which alleged lunatics were apprehended and interned in asylums was not in question in the case of Harnett *v.* Bond and would not be affected by any judgment which the Court of Appeal might pronounce upon the facts of that particular case, he would proceed at once with the appointment of a committee to examine the system without waiting until the appeal could be heard.—Mr. GREENWOOD replied: The suggestion is under consideration and my right hon. friend hopes to be able to make an announcement very shortly.

*Effect of the Dangerous Drugs Act.*

Lieut.-Colonel FREMANTLE asked the Home Secretary the actual effect of the Dangerous Drugs Act, 1923, in checking the illicit importation of such drugs.—Mr. HENDERSON replied: The Act came into force towards the end of last May and its full effect on the smuggling of drugs into this country and on the illicit traffic generally cannot yet be estimated. The additional powers, however, given by the Act have already been found of great value, and the heavier penalties which the courts are now empowered to impose have already, it is believed, had a deterrent effect on the traffic.

*International Opium Traffic.*

Lieut.-Colonel FREMANTLE asked the Home Secretary the present position as to the regulation of the international opium traffic and restriction of production.—Mr. HENDERSON replied: The hon. and gallant Member will be aware that the general supervision of the traffic is entrusted to the League of Nations so far as its members are concerned, subject to the provisions of the international conventions in force, and that the League has appointed an advisory committee to deal with the subject. The proceedings of this committee and the action taken by the League and the several Governments on its recommendations will be found in the official publications of the League. As a result of the preparatory work done by the committee, it was decided at the assembly of the League last September to call two international conferences this year to consider the Far Eastern situation, and the question of the restriction of production respectively. If there is any particular point on which the hon. and gallant Member desires information, perhaps he will put down another question.

*Miner's Nystagmus and Compensation.*

Major ROPNER asked the Secretary for Mines whether the Home Office is considering the scheduling of nystagmus as a disease under the Workmen's Compensation Act; and whether the malady was so scheduled in any other country.—Mr. HENDERSON replied: Miner's nystagmus has been scheduled under the Act ever since 1907. As explained in reply to a question by the hon. Member for Ormskirk on the 21st ultimo, proposals for altering the description of the disease in the schedule are under consideration. I understand that compensation is payable in respect of the disease in Belgium, France, Germany, and certain States of the United States of America.

*Pensions Medical Administration.*

Mr. BENJAMIN SMITH asked the Minister of Pensions whether the Director-General of Medical Services had direct access to the Minister and full control of the medical branch.—Mr. F. O. ROBERTS replied: The arrangements for the control and organisation of the Ministry of Pensions follow the lines adopted in other large departments of State. The heads of the divisions are responsible to me through the Permanent Secretary for the proper control of the work of their respective branches, and I personally consult them whenever I consider it necessary to do so.

*Health Insurance Finance.*

Mr. TURNER asked the Minister of Health what was the total of the contributions paid into the National Health Insurance Fund in 1922; what proportion was paid by employers, employees, and the State, respectively; how much was paid out in sickness, disablement, and maternity benefits, respectively; how much was paid to panel practitioners; and what was the total balance in the insurance funds.—Mr. WHEATLEY replied: The figures relating to England and Wales for 1922 are as follows: The total of the contributions by employers and employees paid into the National Health Insurance Fund was £22,384,000, of which approximately £11,742,000 was paid by employers and £10,642,000 by employees. The State contribution which takes the form of payment of the statutory proportion of the cost of National Health Insurance benefits and administration, together with sundry grants-in-aid and cost of central administration was £7,429,000. The amounts paid out under the headings specified in the question were: Sickness benefits, £8,273,000; disablement, £3,287,000; maternity, £1,606,000; payment to insurance practitioners, £6,317,000. The accumulated funds at the end of the year amounted to about £90,000,000.

TUESDAY, MARCH 18TH.

*Ex-Service Men and Malaria.*

Sir FREDERIC WISE asked the Minister of Pensions how many cases of ex-Service men suffering from malaria had been dealt with this year; and how many of the cases had been refused the pension.—Mr. F. O. ROBERTS replied: During the months of January and February 189 first claims to pension in respect of malaria were decided by the Ministry. In 89 of these compensation was awarded.

*Trials of Lunatics.*

Sir MURDOCH MACDONALD asked the Home Secretary whether, in view of the fact that Lord Justice Atkin's committee on the procedure at the criminal trials of lunatics alleged to be insane was composed solely of the legal profession, and that its report did not meet the objections put forward in the report of the Medico-Psychological Association as regards the retention of the McNaghton rules and other disputed points, and considering that the two subjects, criminal lunacy and lunacy reform, were intimately allied, he would also refer the question of the criminal trials of lunatics to the Royal Commission now being appointed to consider the subject of lunacy reform.—Mr. HENDERSON replied: The matter will be considered.

*Deafness and Pensions.*

Mr. COMYNS CARR asked the Minister of Pensions if he would state on what grounds the maximum disability on account of total deafness was only 70 per cent.; and whether he would consider the possibility of increasing it to 100 per cent., so that the totally deaf man might be placed on equal terms with those disabled in other ways.—Mr. J. W. MUIR replied: The assessment for total deafness was fixed in the early days of the Ministry in accordance with the highest medical advice. My right hon. friend is not prepared to admit that it compares unfavourably with the other assessments for specific injuries laid down in the first schedule to the Royal Warrant.

# Medical Diary.

*Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.*

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE. 1, Wimpole-street, W.**

*MEETINGS OF SECTIONS.*

**Monday, March 24th.**

ODONTOLOGY: at 8 P.M.
*Casual Communication:*
Mr. E. Fish: A Compound Composite Odontome.
*Paper:*
Mr. G. Northcroft: The Clinical Aspect of the Care of Children's Teeth.

**Tuesday, March 25th.**

MEDICINE: at 5.30 P.M.
*Papers:*
Prof. G. Monod: Hæmatemesis without Lesions.
Dr. Oliver Heath: The Clinical Interpretation of Fever.

**Wednesday, March 26th.**

COMPARATIVE MEDICINE: at 5 P.M.
*Paper:*
Dr. N. S. Lucas: A Comparison of the Pathology of Captive Animals with that of Man (with specimens obtained from the Zoological Society's Gardens).
A discussion will follow, opened by Prof. G. H. Wooldridge.

MEDICINE.
PATHOLOGY.
THERAPEUTICS AND PHARMACOLOGY.
Members of these Sections are specially invited to attend and to take part in the discussion.

**Thursday, March 27th.**

UROLOGY: at 8.30 P.M.
*Paper:*
Mr. Clifford Morson: Treatment of Carcinoma of the Prostate.
A discussion will follow, in which Prof. Russ and others will take part.

**Friday, March 28th.**

STUDY OF DISEASE IN CHILDREN: at 5 P.M. (Cases at 4.30 P.M.)
*Cases:*
Dr. Vincent Coates: Progressive Lipodystrophica in a Boy of 7 Years.
Other cases will be shown.
*Discussion:*
On Enuresis.
To be opened by Dr. Dingwall Fordyce, followed by Mr. Ralph Thompson, Dr. J. M. Smellie, and others.

EPIDEMIOLOGY AND STATE MEDICINE: at 8 P.M.
*Paper:*
Dr. R. Dudfield: A Survey of the Mortality due to Child-bearing in London, from the Seventeenth Century.

HISTORY OF MEDICINE.
OBSTETRICS AND GYNÆCOLOGY.
Members of these Sections are specially invited to attend.

HUNTERIAN SOCIETY.
MONDAY, March 24th.—7.30 P.M. Dinner Meeting at Simpson's Restaurant, Bird-in-Hand-court, Cheapside, London, E.C., Dr. Poynton: Rheumatics.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES, 11, Chandos-street, Cavendish-square, W.
FRIDAY, March 28th.—8.30 P.M., Discussion on Gonorrhœa Infection by Secondary Organisms, to be opened by Colonel E. T. Burke, followed by Dr. Lydia Henry.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.
TUESDAY, March 25th.—5 P.M., Dr. Leonard G. Parsons: Wasting Disorders of Early Infancy. (First Goulstonian Lecture.)
THURSDAY.—5 P.M. (Second Goulstonian Lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.
MONDAY, March 24th, to SATURDAY, March 29th.—BETHLEM ROYAL HOSPITAL. Course in Psychological Medicine. Tues. and Sat., 11 A.M., Dr. Thomas Beaton and Dr. Porter Phillips: The Psychoses.—CHELSEA HOSPITAL FOR WOMEN. Daily: Operations, &c. Mon., 2 P.M., Mr. Banister: Backward Displacement. Tues., 11 A.M., Mr. Galletly: Demonstration in Wards, Gynæcological Histories. Wed., 2 P.M., Mr. Ellison: Vaginal Discharge. Thurs., 9.30 A.M., Mr. Provis: Sterility. Fri., 2 P.M., Mr. Comyns Berkeley: Cervical Fibroids.—ROYAL FREE HOSPITAL. Wed., 5.30 P.M., Dr. Heald: The Uses of other Electrical Currents.—ROYAL WATERLOO HOSPITAL. Lecture-Demonstrations, Ward Work, &c. Mon., 2 P.M., Dr. Woodwark; 3 P.M., Dr. Barron; 4 P.M., Dr. Donaldson. Tues., 2 P.M., Dr. Moon; 3 P.M., Dr. Myers; 4 P.M., Dr. Davidson. Wed., 1.30 P.M., Mr. Cairns Forsyth. Thurs., 1.30 P.M., Dr. Perkins; 2.30 P.M., Mr. Bickerton; 3.30 P.M., Dr. Tindal Atkinson. Fri., 2 P.M., Dr. Perkins; 4 P.M., Mr. Beevor. Sat., 9.30 A.M., Mr. Frankau (Operations). Further particulars can be obtained from the office at No. 1, Wimpole-street, W. 1.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith.
MONDAY, March 24th.—10 A.M., Surgical Registrar: Surgical Pathology. 2 P.M., Mr. Simmonds: Out-patients (Surgical). 2 P.M., Mr. Simson: Diseases of Women.
TUESDAY.—10 A.M., Mr. Steadman: Dental Department. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Banks-Davis: Diseases of Throat, Nose and Ear.
WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr. Owen: Medical Out-patients. 2 P.M. Dr. Pernet: Skin Department.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Dr. Scott Pinchin: Medical Out-patients. 2 P.M., Mr. MacDonald: Genito-Urinary Department.
FRIDAY.—10 A.M., Dr. Drummond Robinson: Gynæcological Operations. 10.30 A.M., Dr. Pritchard: Medical Wards. 2 P.M., Mr. Sinclair: Surgical Out-patients.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily 10 A.M., to 6 P.M., Saturdays, 10 A.M., to 1 P.M. In-patients, Out-patients, Operations, Special Departments.

NORTH-EAST LONDON POST-GRADUATE COLLEGE. Prince of Wales's General Hospital.
(At 4.30 P.M.)
MONDAY, March 24th.—Mr. T. H. C. Benians: Chronic Bacterial Infections of Mucous Surfaces.
TUESDAY.—Dr. J. Metcalfe: A Survey of Progress in X Ray Diagnosis.
WEDNESDAY.—Dr. J. Browning Alexander: Hæmoptysis.
THURSDAY.—Mr. J. Bright Banister: Disturbances in Micturition.
FRIDAY.—Dr. L. R. Yealland: Clinical Demonstration of Cases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.
POST-GRADUATE COURSE.
CLINICAL LECTURES AND DEMONSTRATIONS.
MONDAY, March 24th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Disseminated Sclerosis: Dr. Birley.
TUESDAY, March 25th.—2 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Cerebral Topography: Mr. Armour.
THURSDAY, March 27th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Diseases of Bone: Dr. Russell J. Reynolds.
FRIDAY, March 28th.—2 P.M. Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Demonstration of Physical Exercises in the Exercise Room.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.
MONDAY, March 24th.—12 noon, Syringomyelia, Hydromyelus and Allied Conditions: Dr. J. G. Greenfield.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE NEUROLOGY OF THE EYES.
WEDNESDAY, March 26th.—3.30 P.M., The Central Visual Paths: Mr. Leslie Paton.
Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday.
All applications should be sent to the Secretary, Medical School.
J. G. GREENFIELD, Dean of Medical School.

HOSPITAL FOR SICK CHILDREN, Great Ormond-st. W.C.
THURSDAY, March 27th.—4 P.M., Mr. Fairbank: Scoliosis.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.
THURSDAY, March 27th.—5 P.M., Dr. Roberts: The Lying-in.

CANCER HOSPITAL, Kensington, S.W.
WEDNESDAY, March 26th.—4.30 P.M., Sir Thomas Horder: The Nutritional Factor in Malignant Disease.

VICTORIA UNIVERSITY OF MANCHESTER MEDICAL SCHOOL.
FRIDAY, March 28th.—5.30 P.M., Prof J. C. Brash: The Genesis and Growth of Deformed Jaws and Palates.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES.
TUESDAY, March 25th.—4.15 P.M., Dr. J. Shaw Dunn: High Colour Index Anæmias.

MANCHESTER BABIES' HOSPITAL POST-GRADUATE LECTURES.
FRIDAY, March 28th.—5.30 P.M., Dr. Jenkins: Vaccines and their Use in the Treatment of Infants.

UNIVERSITY OF LIVERPOOL POST-GRADUATE LECTURES. (At 3.30 P.M.)
MONDAY, March 24th.—(At the Children's Hospital.) Dr. W. Johnson: Poliomyelitis.
TUESDAY.—(At the Southern Hospital.) Dr. W. Johnson: Idiopathic Epilepsy.
WEDNESDAY.—(At the Northern Hospital.) Dr. Pemberton: Diagnosis and Treatment of Abnormal Conditions in Upper Alimentary Tract.
THURSDAY.—(At the Stanley Hospital.) Dr. Wadsworth: Diabetes.
FRIDAY.—(At the Royal Infirmary.) Mr. A. E. Burroughs: Medical Ophthalmoscopy with Lantern Illustrations.

# Vacancies.

*For further information refer to the advertisement columns.*

*Ayr County Hospital.*—Sen. Res. H.S. £100.
*Barbados General Hospital.*—Jun. Res. S. £250
*Birmingham Union, Selly Oak Hospital,*—Res. Asst. Med. Supt. £550.
*Bradford City.*—Bacteriologist and Pathologist. £750.
*Brighton, Royal Alexandra Hospital for Sick Children.*—H.S. £120.
*Bury Infirmary.*—Jun. H.S. £150.
*Cancer Hospital, Fulham-road, S.W.*—H.S. £100.
*Central London Ophthalmic Hospital, Judd-street, St. Pancras, W.C.*—H.S. £100, Jun. H.S. £50.
*Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.*—Hon. Radiographer.
*Coventry and Warwickshire Hospital.*—Res. H.S. £150.
*Croydon Union, Mayday-road Hospital, &c.*—Second Asst. M.O. £300.
*Dublin University, Trinity College.*—Prof. of Pathology. £800.
*Durham County Council Education Dept.*—Asst. Sch. M.O. £600.
*Evelina Hospital for Children, Southwark, S.E.*—H.S. and H.P. Each £60.
*Guildford, Royal Surrey County Hospital.*—H.S. £150.
*Guy's Hospital, Salomons Infant Welfare Centre.*—M.O. £350.
*Hampstead Council of Child Welfare, 27, Heath-street, N.W.*—Maternity &c., M.O. £400.
*Hospital for Epilepsy and Paralysis, Maida Vale, W.*—Med. Reg. £100.
*Hospital for Sick Children, Great Ormond-street, W.C.*—H.S., H.P., and Asst. Cas. O. £50.
*Hull City Asylum.*—Med. Supt. £1000.
*Keighley, Victoria Hospital.*—H.S. £180.
*Leeds City.*—Chief Clin. Tub. O. £900.
*Leeds, Ministry of Pensions Hospital, Beckett Park.*—Radiologist. £600.
*Leicestershire and Rutland Mental Hospital, Narborough, near Leicester.*—Second Asst. M.O. £350.
*London Jewish Hospital, Stepney Green, E.*—Cas. O. £200.
*London Lock Hospital, 91, Dean-street, W.*—H.S. £200.
*London Temperance Hospital, Hampstead-road, N.W.*—Surg. Reg. and Med. Reg. Each 40 guineas.
*Manchester, Victoria Memorial Jewish Hospital.*—Secy. and Supt. £350.
*Norfolk County Council.*—Asst. Tub. O. £600.
*Norwood and District Cottage Hospital, 77a, Westow Hill, S.E.*—Hon. Anæsthetist.
*Oxford, Radcliffe Infirmary and County Hospital.*—Hon. Asst. S.
*Paddington Green Children's Hospital, W.*—H.P. and H.S. Each £150.
*Prince of Wales's General Hospital, Tottenham, N.*—Two H.S.'s, H.P. Each £150. Jun. H.S. and Jun. H.P. Each £110.
*Prison Medical Service.*—M.O.'s. £504 14s.
*Queen's Hospital for Children, Hackney-road, Bethnal Green, E.*—Asst. S. R.M.O. £200.
*Rochdale Infirmary and Dispensary.*—Jun. H.S. £200.
*Royal Chest Hospital, City-road, E.C.*—H.P. £100.
*Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.*—Hon. P.
*Royal Westminster Ophthalmic Hospital, King William-street, W.C.*—Asst. H.S.
*St. Thomas's Hospital.*—Ophth. Reg.
*Sheffield Royal Hospital.*—Asst. Cas. O. £100.
*Stoke-on-Trent, North Staffordshire Infirmary.*—H.S. £200.
*Surrey County Council.*—Asst. M.O.H. £600.
*Western Australia, Medical and Health Dept.*—Bacteriologist and Pathologist. £708.
*Western Ophthalmic Hospital, Marylebone-road, N.W.*—Sen. and Jun. Non.-Res. H.S.'s. £150 and £100 respectively.
*York County Hospital.*—H.P. £150.
*York Dispensary.*—Res. M.O. £175.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Portree, Inverness; Shap, Westmorland; Winslow, Buckingham; Wartle, Aberdeen.

# Births, Marriages, and Deaths.

## MARRIAGES.

CORMACK—MCRAE.—At Christ Church, Rangoon, on Feb. 5th, 1924, Major H. S. Cormack, *M.C.*, I.M.S., eldest son of John Cormack, of Corstorphine, Edinburgh, to Dorothy, only daughter of the late George William McRae and of Mrs. Isobel McRae, Felpham, Sussex.

## DEATHS.

BALLINGALL.—On March 9th, at Cloudesley-road, St. Leonards-on-Sea, George Anderson Ballingall, M.D., aged 63 years.
FITZMAURICE.—On March 11th, at 8t. Flora's-road, Littlehampton, Richard Fitzmaurice, L.R.C.S., L.R.C.P., late of Lindfield, aged 72.
HOOD.—On March 15th, at Boundary-road, St. John's Wood, of heart failure, following influenza, Donald William Charles Hood, C.V.O., M.D., F.R.C.P., aged 76 years.
JOSLING.—On March 12th, at a nursing home in Hastings, Lieut.-Colonel Charles Langford Josling, late of the R.A.M.C.
MICHAEL.—On the 7th of March, at 7, Canfield-gardens, N.W. 6, Gustave Michael, M.B., C.M. Edin., aged 61.
WOMACK.—On March 11th, at The Croft, Finchampstead, Berks, Frederick Womack, M.B., B.Sc.

*N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Comments, and Abstracts.

## THE HEALTH OF THE SOUDAN.

### FOUNDATION OF A NEW MEDICAL SCHOOL.

WHILE our responsibility for the health of Lower Egypt is becoming less direct, medical administration in the Soudan remains, as before, in the hands of British officials. This fact lends interest to the report on the Administration and Condition of Soudan in 1922, prepared by the Governor-General, Major-General Sir Lee O. F. Stack. This report records the retirement on pension of, amongst other officials, Dr. E. S. Crispin, C.B.E., Director of the Medical Department, which he joined in 1904 after three years' service with the Medical Corps of the Egyptian army. He was first posted as medical officer to Halfa Province, and was subsequently transferred to the Red Sea Province just at the beginning of the development of Port Soudan; for nearly five years he had charge of that province, and carried the very difficult work of public health and quarantine to a high degree of efficiency. In 1909 he was transferred to Khartoum as assistant director of the department. In 1916 he was appointed Director and also President of the Central Sanitary Board, posts which he held until his retirement in August, 1922. In addition to his other duties, he was a member of the Governor-General's Council from September, 1919. "The present efficiency of the medical department is due," it is added, "to a large extent to the energy, personality, and powers of organisation of Dr. Crispin, and his retirement is a loss which will be keenly felt both by the medical department and the Central Government." Dr. Crispin's successor is Dr. O. F. H. Atkey.

*Training of Assistant Medical Officers.*

Perhaps the most noteworthy feature of the year, as regards public health, was the gratifying success which has attended the training of native assistant medical officers. Two of them carried out very valuable work in Dongola, where a severe epidemic of bilharzia had broken out in connexion with the pumping stations at Nuri and Gureir, and also at Magall and Tangassi Island; 5178 injections of antimony tartrate were made, 455 cases were cured, and these areas of infection are now clear. Their work at various hospitals in the provinces has also been consistently well reported on, and is a most encouraging sign for the future. During the summer five assistant medical officers received a course of laboratory training. It is hoped in time to give this additional microscopic training to all, so that when attached to a hospital they can carry on the necessary microscopical work—e.g., staining for, and recognising, malarial parasites, &c.

In civil hospitals the number of in-patients decreased by 922, from 18,664 to 17,742; and out-patients by 20,370, from 376,097 to 355,727. The decrease is mainly attributable to the general shortage of money and the closing down of the work at Makwar Dam. Military hospitals treated 3960 civil in-patients and 59,936 out-patients, as compared with figures of 3174 and 39,314 respectively in 1921. The increase in the number of out-patients is mainly due to a large increase of the work at Rumbek. Apart from a heavy incidence of malaria all over the Soudan, due to exceptional heavy rains, public health has been good. Malaria was especially prevalent in Khartoum and Omdurman.

*Epidemics and Preventive Measures.*

An epidemic of small-pox broke out last winter at Khartoum among recent immigrants from Kordofan; it spread up the Blue Nile as far as Roseires and up the White Nile as far as Kosti. Later in the summer it spread north to Atbara, Sinkat, and Port Soudan, but the outbreaks in these provinces were very limited. Fortunately both in the provinces north of Khartoum and in the Blue Nile Province, where the population is densest, vaccination has been very thorough. The total number of cases was approximately 179, of which 13 proved fatal. The number of vaccinations performed in connexion with this epidemic was 191,577. A small outbreak of cerebro-spinal fever occurred among the labourers working on the new pumping station at Wad-el-Nan in December. Vigorous measures were taken and the outbreak was strictly limited. There were 32 cases, of which 28 died.

The hospital ship (*Lady Baker*) was put in commission, and was handed over to the medical authorities at Malakal at the end of March. She returned to Khartoum at the end of June. During this period she made six tours, in the course of which many places were visited where previously the natives had had no opportunity of receiv ng medical assistance; 1094 natives were attended, and 1040 injections of novarsenobenzol were given. A report from Bahr-el-Ghazal Province mentions that sleeping sickness is still a formidable menace in Tembura district, but the plan initiated in 1921, of collecting the Azande into villages in

cleared areas, is being steadily followed, and should result in a considerable check to the disease. The scheme is disliked locally, inasmuch as it involves changing the habits of the people who are accustomed to live in separate homesteads in the forest. An additional district commissioner is, however, being appointed to this district for the express purpose of supervising anti-sleeping sickness measures, and it is hoped that a wider realisation of their benefit will result, and that the coöperation of the people will be secured.

*The New Medical School.*

During the year under review a complete medical survey was made for the first time of all boys entering the Gordon College and Omdurman School. Similar surveys, but rather less complete, were carried out at Port Soudan, Atbara, and Wad Medani schools. These surveys cannot fail to be of the greatest assistance to the teaching staff, and it is hoped to continue them every year. Very excellent work has been carried out at the Midwives School in Omdurman. In the course of the year 15 midwives received training and were granted licences. Two new hospitals, one at Kassala and the other at Halfa, have been completed and are now in use. New dispensaries have been opened at Resik in the Upper Nile Province, and at Rashad, Nuba Mountains Province. At Nahud a new hospital is in process of erection. The new building for the Medical School, Khartoum, will, it is hoped, be soon completed and ready for use.

Major R. G. Archibald, D.S.O., Director of the Wellcome Research Laboratories, reports that, in spite of the large number of routine examinations performed, researches have been carried out on various problems and progress has been maintained in all sections. In the bacteriological section the routine work has been particularly heavy; 5255 examinations, constituting a record number for this section, were carried out, while over 800 Wassermann tests were performed. Various researches have been carried out on cattle anthrax, epidemic jaundice, Malta fever, bilharziasis, sleeping sickness, and dysentery. Laboratory investigations proved the interesting fact that *Trypanosoma rhodesiense* was the cause of certain cases of sleeping sickness in Tembura, Bahr-el-Ghazal Province. A mollusc survey was carried out in a part of the province of Dongola in May. The result showed that the mollusc *Isidora innesi* was the intermediate host responsible for the spread of bilharzia in that province.

The Gordon Memorial College at Khartoum celebrates its coming of age this year and the establishment of a medical school there is the realisation of a scheme which had the warm support of the late Lord Kitchener. The close association of medical school, civil hospital, and research laboratories is of happy augury for the success of the scheme.

## RESCUE AND PREVENTIVE INSTITUTIONS.

THE Public Health Department of the London County Council has issued a second edition of the handbook of information on rescue and preventive institutions. This includes a list of homes and hostels for those suffering from venereal disease, an appendix of institutions dealing with cases of mental deficiency, as well as alphabetical and classified indexes of the homes. The handbook was first drawn up by Sir William Hamer in 1921, following an inquiry made by Dr. F. N. Kay Menzies into the scope of the work done by various voluntary societies. Workers were then found to be frequently frustrated by lack of knowledge about available facilities, and information was therefore supplied in this handy and compact form. The second edition has been brought up to date, and may be purchased from Messrs. P. S. King and Son, Ltd., 2 and 4, Great Smith-street, London, S.W. 1 price 1*s.* 3*d.*

## ENTRY OF MEDICAL STUDENTS IN 1923.

WITH reference to the graph which appeared on p. 579 of our issue of March 15th, it has been pointed out to us that the number of medical students who were registered last year by the General Medical Council is not a precise indication of those who actually entered upon the curriculum. A certain number of students who would, under the old regulations, have begun the study of chemistry and physics in October, only began their pre-registration work at this time, and instead of being registered in that month will probably register some time this year. It appears, further, that the northern universities are not making arrangements to bring the new curriculum into force until the current year. Consequently students who commence study there are not at present registered. There is no doubt, however, that after these corrections have been applied there will remain a considerable drop in numbers, although it will not be so large as is indicated by the graph, when 1923 and 1924 are reviewed together. By reason of the revised curriculum the year 1923 was in some degree an interregnum.

## AN IMPROVED MEDICAL CASE.

THE disastrous results which may follow the hasty picking up of a bag of the attaché type which has not been properly fastened are entirely obviated by an extremely ingenious handle fitted to the bags made by Messrs. E. Gonville and Co., of 37, Walbrook, London, E.C. 4. This handle, which in appearance is similar to the ordinary bag handle, is split longitudinally down the centre, one half being fixed to one side of the bag, and the other half to the opposite side. The bag cannot be closed without first fitting together the extreme ends of each half of the handle, and then closing the halves as one would shut a purse. The two halves of the handle are provided with a catch and a lock and key. The action both of opening and shutting the bag is simply and quickly performed. The prices range from 17*s.* 6*d.* for a 14 inch, to 25*s.* for a 20 inch bag. Special sizes are made to order.

## TSETSE-FLY INVESTIGATION IN NIGERIA.

A NOTE on the tsetse-fly investigation now in progress in Nigeria by Dr. T. B. Adam, Acting Director of the Medical and Sanitary Service, is included in the address delivered by the Governor, Sir Hugh Clifford, at the Second Session of the Legislative Council held at Lagos on Feb. 11th.

The base camp for investigation during the past year has been situated in an important tsetse belt which cuts across the main roads between Azare and Hadeija in the Kano Province. An intensive study has been made of the trypanosome infections and food of the two species of tsetse, *G. morsitans* and *G. tachinoides*, which occur in this area. In order to obtain a continuous record of these features it has been necessary to make daily dissections of the flies. In all some 30,000 such dissections have been carried out, and from the figures so obtained mathematical curves have been prepared which show a regular rise and fall according to the movements of the game animals and the changes of the seasons. A most careful study of the breeding haunts of the flies has been prosecuted and a knowledge of the seasonal variations of breeding has been obtained, so that it is now considered that sufficient information has been acquired to justify large-scale experiments. The objective of these experiments is the determination of the vexed question of the relationship of *G. morsitans* and big game. Treatment of cases of sleeping sickness by Bayer "205" has been undertaken and the immediate results are most satisfactory. Patients brought in moribund for the first injection have been known to walk in with assistance for the second treatment two days later. The permanence of these results has yet to be tested, and much work remains to be done in determining the number of doses which can be regarded as effective in various stages of the disease, at different ages, and in all the different conditions that may be met with.

## SANTOPERONIN.

IN our notice of a new anthelmintic (THE LANCET, Feb. 23rd, p. 398) we reported that it differed from the maker's description in containing sulphate. Since then we have received further reports on this substance, according to which it is a mixture containing inter alia salicylic acid as well as sulphate, and cannot be regarded as a definite chemical compound. Investigations made at the State Institute for Pharmaco-Therapeutic Investigations, Leiden, Holland, suggest that the anthelminthic action is uncertain and inferior to that of santonin itself.

---

Messrs. H. K. Lewis and Co., Ltd., have arranged to act as agents in the British Isles for the publications of the Chemical Catalog Company, U.S.A., and will supply a list of these works on demand. All the principal books are kept in stock.

*R. G.*—The word "apostemate," although perfectly good sixteenth-century English, has long become obsolete, and "suppurate," which is good English Latin, has taken its place. There seems no sufficient reason for its revival. Even when "apostemate" and kindred words were current they seem to have been used uneasily, for all kinds of spelling are to be found—e.g., apostemate, apostumate, aposteme, apostume, aposthume, imposthume, apostem.

*R. S.*—There seems no doubt that the medical officer at an infirmary is entitled to sign lunacy certificates unless he is disqualified for the reasons stated in the Act and printed on the back of the certificate. There is much to be said for the officer employed by the guardians himself signing the certificate, for the guardians have to pay, and may reasonably require their officer to examine. No doubt it is advisable for anyone who has to sign lunacy certificates to join one or other of the medical defence societies, and, in addition to this, he would be prudent to keep a careful note of the circumstances in every case.